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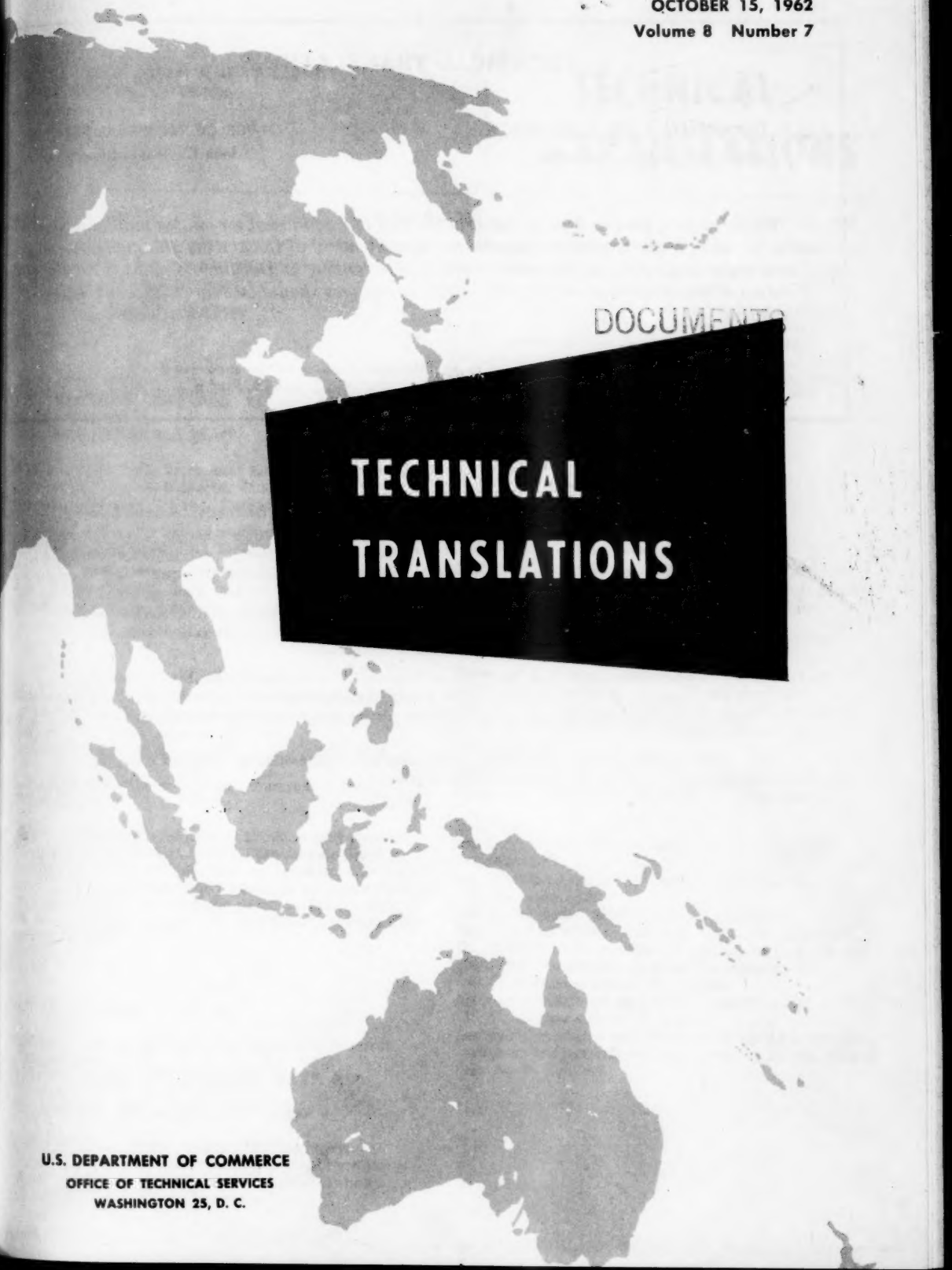

U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES
John C. Green, *Director*

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TECHNICAL TRANSLATIONS

Volume 8, Number 7 Pages 601-730 October 15, 1962

*Descriptors marked with an asterik are included in the subject index.

BIBLIOGRAPHY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS. 21 Mar 62 [70]p.
JPRS: 13084.
Order from OTS or SLA $6.60 62-23609

Consists of abstracts from East European scientific journals published in Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, and Yugoslavia.

DESCRIPTORS: *Aeronautics, Biochemistry, *Chemistry, *Computers, *Electronics, *Geophysics, *Manufacturing methods, Mapping, *Mathematics, *Medicine, *Metallurgy, Microbiology, Nuclear physics, *Physics, Physiology, Optics, Solid state physics, Spaceflight.

CUMULATIVE LIST OF TRANSLATIONS PRODUCED BY THE JHU/APL LIBRARY. 20 June 62, 5p. 39 refs.
APL/JHU TG 230-T 06.
Order from OTS $0.50 62-11714

DESCRIPTORS: *Translations, *Indexes, Science, *Bibliography

This is a listing of a sequential group of fifty translations completed by the Library Translations Service, excluding the Translations Service Accessions, a regular Library publication which gives the translated tables of contents of Soviet scientific periodicals currently in the APL Library. (Applied Physics Lab. abstract) (See also 61-21997)

OTS SB-418 Suppl. 1 $0.10

Office of Technical Services, Dept. of Commerce, Washington, D. C.
SOLAR ENERGY APPLICATIONS. Jan 62, 8p.
110 refs.
OTS Selective Bibliography SB-418 Suppl. 1.

DESCRIPTORS: *Solar energy, *Bibliography, Thermal diffusion, *Solar furnaces, Photochemistry, *Solar cells, Silicon, *Sea water, *Desalination, Distilling plants, *Solar batteries.

Lists 110 reports and translations added to the OTS collection during the period July 60 to Jan 62. Covers research on measurement of thermal diffusivity using a solar furnace, photochemistry in a solar furnace, silicon solar cells, solar energy converters and generators, solar stills, solar distillation of sea water, and solar batteries among other subjects. (Author)

AGRICULTURE

SOVIET INDUSTRIAL DEVELOPMENT: SELECTED TRANSLATIONS ON SOVIET TRACTORS AND AGRICULTURAL MACHINERY (32). 18 July 62 [32]p.
JPRS: 14514.
Order from OTS or SLA $3.60 62-32009

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 2, p. 55-66 (some articles abbreviated); Standartizatsiya (USSR) 1962, no. 4, p. 32-34; Mashinostroitel' (USSR) 1962, no. 3, p. 25-27.

DESCRIPTORS: *Tractors, *Agricultural machinery, Machines, Automation, Agriculture, Translations

Contents:
The self-propelled SK-4 Combine and its modified models, by L. N. Anashkina
The VP-300 preheater for drying corn cobs, by K. Kh. Stepanyuk
The ZS-60 grain loader, by S. F. Chellei
The KRN-1.4 rotary cultivator, by L. Ya. Zagovskii
The ZhVN-6 mounted windrow reaper, by S. F. Chellei
The SKNK-6 combined corn sowing machine, by A. P. Veremeev and E. A. Belyaev
About trademarks of agricultural machines, by V. F. Gorbov and Yu. P. Laptev
Automatic machines and automatic lines for assembling tractors and agricultural machines, by Z. Ya. Padrul' and V. V. Kosilov

Chikhach va, Yu. N.
THE USE OF SYSTEMIC INSECTICIDES IN THE FORM OF GRANULES (K Primeneniyu Insektitsidov Vnutrirastitel'nogo Deistviya v Forme Granul) tr. by O. Jukov. [1962] [14]p. (foreign text included) 9 refs. [CSIRO] Trans. no. 5556.
Order from OTS or SLA $1.60 62-32237

Trans. of V[sesoyuznyi] I[nstitut] Z[ashchity] R[astenii]. Trudy (USSR) 1960, v. 14, p. 201-206.

DESCRIPTORS: *Pest control, *Insecticides, Thiols, Agriculture, *Plants, Fertilizers.

Kalinina, A. V.
ON THE STUDY OF BIOCOMPLEXES IN CONNECTION WITH THE TASKS OF DEVELOPMENT OF AGRICULTURE IN THE ARID REGIONS OF THE USSR (Ob Izuchenii Biokompleksov v Svyazi s Zadachami Razvitiya Sel'skogo Khozyaistva Aridnykh Raionov SSSR). 7 May 62, 31p. 27 refs. Trans. A-1346.
Order from OTS or SLA $3.60 62-24529

Trans. of Botanicheskii Zhurnal (USSR) 1961, v. 46, no. 11, p. 1574-1583.

DESCRIPTORS: *Agriculture, Ecology, Soils, *Plants, *Insects, *Animals, Pest control, Diseases.

Kalnin', A., Ozol, A., and Popov, E.
BIOCHEMISTRY IN AGRICULTURE [AND] FULL AUTOMATION OF PRODUCTION. 19 June 62 [7]p. JPRS: 14243.
Order from OTS or SLA $1.10 62-25491

Trans. from Izvestiya (USSR) 1962, 29 Mar, p. 4.

DESCRIPTORS: *Biochemistry, *Agriculture, * Automation, Manufacturing methods.

Kozlov, I. V.
EFFECT OF FIXED NITROGENOUS COMPOUNDS ON THE NITROGEN-FIXING ABILITY OF TUBERCLE BACTERIA (O Vliyanii Svyazannykh Soedinenii Azota na Azotofiksiruyushchuyu Aktivnost' Kluben' kovykh Bakterii). 4 May 62, 14p. (1 fig. omitted) 8 refs. Trans. A-1345.
Order from OTS or SLA $1.60 62-24528

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1962, v. 7, no. 2, p. 49-54.

DESCRIPTORS: *Nitrogen compounds, *Air, *Soils, *Plants, *Azotobacter, Fertilizers, Soybeans, Growth.

Assimilation of air nitrogen by bean plants is in relation to the intensity of the formation on its roots of tubercles and the nitrogen fixing activity of bacteria that are present in them. Small doses of nitrogen fertilizers, introduced under the beans during the first period of its vegetation on soils that are poor in their own reserves of free nitrogen, react favorably on the formation of the root system, the amount of tubercles, their size and weight, and considerably increases the effectiveness of nitraginization. Compost, in a dose of about 2 tons/acre, favorably reacts on the yield of beans if it is introduced under plants which were bacterized with nitrogen, even without the addition of mineral forms of nitrogen fertilizers

Animal Husbandry

GRADUATES FROM YUGOSLAV VETERINARY FACULTIES, 1961. 18 June 62 [14]p. JPRS: 14149.
Order from OTS or SLA $1.60 62-25172

Trans. of Veterinarski Glasnik (Yugoslavia) 1962, v. 16, no. 3, p. 279-285.

DESCRIPTORS: *Medical personnel, Veterinary medicine.

Contents:
First veterinarians from the veterinary faculty in Ljubljana, by M. Razborsek
Sixty-four new veterinarians from the veterinary faculty in Sarajevo in 1961, by B. Bunic
145 New veterinarians graduated from the veterinary faculty in Belgrade, 1961, by D. I. S.
15 Veterinarians received doctorates from the veterinary faculty in Zagreb, 1961, by I. M.
Doctoral candidates at the veterinary faculty in Belgrade, by D. M. S.
Three veterinarians received doctorates at the veterinary faculty in Sarajevo, in 1961, by B. Bunic.

Hussel, L.
COMMENTS ON THE CONTROL OF ORNITHOSIS. 28 Dec 61 [14]p. JPRS: 11663.
Order from OTS or SLA $1.60 62-19438

Trans. of Monatshefte für Veterinärmedizin (East Germany) 1961, v. 16, no. 12, p. 449-453.

DESCRIPTORS: *Virus pneumonia, Diseases, Control, *Public health, Veterinary medicine, Birds.

Kolic, I.
A SIMPLE METHOD OF DETERMINING TOLERATION OF BLOOD TO TRANSFUSION (Jednostavan Nacin za Odredjivanje Podnosljivosti Krvi za Transfuziju). 11 Sep 61 [8]p. JPRS: 10116.
Order from OTS or SLA $1.10 62-19711

Trans. of Veterinarski Glasnik (Yugoslavia) 1961, v. 15, no. 2, p. 105-108.

DESCRIPTORS: *Blood transfusions, *Horses, Erythrocytes, *Agglutination, Veterinary medicine, Test methods.

In the isohemagglutination test, even the weakest agglutination could be established macroscopically in the test tubes, which were shaken and then left to stand for a period of ten minutes. The results in the test tubes which were shaken and then left to stand for ten minutes showed that it is safe to use the blood of the same donors for transfusion to certain recipients and there is no need for a microscopic examination. The applied technique is safe, quick, and simple, and therefore in many ways it makes the application of blood transfusion easy even for a veterinarian interne. (Author)

Kovalenko, Ya. R., Ivanov, B. G. and others.
EXPERIMENTAL INOCULATION OF SWINE WITH THE VIRUS OF AFRICAN FEVER (Eksperimental'noe Zarazhenie Svinei Virusom Afrikanskoi Chumy). 23 Apr 62, 17p. (2 figs. omitted) 10 refs.
Trans. V-1771.
Order from OTS or SLA $1.60 62-24526

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1961, v. 24, p. 53-61.

DESCRIPTORS: *Swine, Diseases, Pathology, Viruses, *Virus vaccines, Immunology, *Veterinary medicine.

Swine, treated with crystal-violet vaccine, anti-plague vaccine, and lapanized vaccine ASV, were subsequently inoculated with a native virus of African swine fever. Although the agents used are known to be effective in the prevention of swine plague, all animals succumbed to African swine fever. The course of the disease is characterized by a sharp increase in temperature on the third or fourth day, and by leukopenia with a sharp decrease in the leukocyte count just before death. Predominant among the pathologico-anatomic changes observed are the intensive decomposition of nuclear chromatin in the lymphoid cells, profound alturations in the blood vessels, and edemas, thromboses and hemorrages in the various organs. All phases of the disease indicate that it bears little relationship to swine plague.

Plant Cultivation

Akhmedov, A. A.
SORGHUM IN THE ARID ZONE OF THE NORTH CAUCASUS (Sorogo v Zasushlivoi Zone Severnogo Kavkaza). 11 May 62, 10p. (4 figs. omitted).
Trans. A-1348.
Order from OTS or SLA $1.10 62-25039

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1962, v. 7, no. 2, p. 64-68.

DESCRIPTORS: *Mountains, *Grasses, Production, Hydrocyanic acids, Carbohydrates, Abundance, Corn, Climatic factors, Geophysics, *Agriculture, Plants.

Bolsunov, Igor.
SELECTION (BREEDING) OF TOBACCOS IN THE COUNTRIES OF EUROPE. [1962] 20p.
Order from K-H $25.00 K-H 5629-a

Trans. of Revue Internationale des Tabacs (France) 1955, v. 30, p. 171-180.

DESCRIPTORS: *Tobacco, Selection, Europe.

Bolsunov, Igor.
SELECTION (BREEDING) OF TOBACCOS IN THE COUNTRIES OF EUROPE. [1962] 23p.
Order from K-H $28.75 K-H 5629-b

Trans. of Revue Internationale des Tabacs (France) 1955, v. 30, p. 195-206.

DESCRIPTORS: *Tobacco, Selection, Europe.

Borgwaldt, Heiner.
TOBACCO (CURER ?) PROCESSING. [1962] 6p.
Order from K-H $7.00 K-H 8467a

Trans. of German language article from an unidentified source, n. d.

DESCRIPTORS: *Tobacco, Processing, *Aging.

Brucker, W.
NEW DATA ON THE GENESIS OF PLANT TUMORS. 23 Oct 61 [11]p. JPRS: 10725.
Order from OTS or SLA $1.60 62-19515

Trans. of [Academia Republicii Populare Romine. Institutul de Inframicrobiologie]. Studii si Cercetari de Inframicrobiologie, 1961, v. 12, no. 1, p. 19-25.

DESCRIPTORS: Plants, *Tumors, Glycolysis, Fermentation, *Nucleic acids, *Chemotherapeutic agents.

The plant tumor produces no lactic acid but is nevertheless the seat of energy formation outside the citric acid cycle. These results were demonstrated through analytic inhibition studies. Fermentations: aconitase, succino-dehydrogenation, and oxidative phosphorization were blocked by the application of fluour-acetic acid, malonic acid, and 2,4-dinotrophenol. A specific increase in the phosphate content of acid-soluble fractions was demonstrated in insoluble barium acetate. This fraction contains especially phosphates rich in energy, and the fundamental metabolites for the formation of nucleic acid. Secondary tumors that are not connected with the primary tumor through the rows of subepidemic tumoral cells, and are at the same time abacterial were caused by a subcellular agent. After the fixation of the free desoxyribonucleic acid in the genetic apparatus of the newly appeared tumoral cell, the tumor inducing principle can no longer be extracted. Attempts to isolate an agent from a manifest crown gall four days after the infection yielded no results. A review of the literature showed that a chemotherapy of adult or manifest tumors is very problematical. Cytostatics, antimitotics, and other

inhibitors of multiplication prove to be nonphysiological and even harmful to the organism. Quinetine, on the contrary, even when applied in large quantities, is not harmful. But its action is only evident in applications preceding tumor formation or in their first phase of development. Completely healthy tissues never generate malignant tumors.

Deppe, K. and Seehofer, F.
PHOTOMICROGRAPHS ON THE HISTOLOGY AND ANATOMY OF TOBACCO. [1962] 4p.
Order from K-H $5.00 K-H 11816d

Trans. of Beiträge zur Tabakforschung [sic] 1962, no. 4, p. 171-175.

DESCRIPTORS: *Microphotography, *Histology, Anatomy, *Tobacco.

Gorshenin, K. P.
THE SOILS OF SOUTHERN SIBERIA (FROM THE URALS TO THE BAIKAL) tr. by A. Gourevitch. 1961, 758p. 134 refs. PL-480 Agr.
Order from OTS $7.75 60-21833

Trans. of mono. Pochvy Yuznoi Chasti Sibiri (Ot Urala do Baikala) Moscow, 1955, 590p.

DESCRIPTORS: *Soils, *Siberia, *Classification, Geography, Forestry, Agriculture, Geology, Hydrology, Rock, Climate, Grasses, Plants, Trees, Mountains, Swamps, Cereals

Contents:
Conditions of soil formation and development in southern Siberia
The soils of southern Siberia
Soil zones and regions of southern Siberia

Mel', M. I.
INVESTIGATIONS OF THE CONNECTION BETWEEN CROP YIELD OF SPRING WHEAT AND CLIMATIC CONDITIONS OF THE REGION OF CULTIVATION (Opyt Izucheniya Svyazi Urozhainosti Yarovoi Pshenitsy s Klimaticheskimi Usloviyami Mesta Vozdelyvaniya) tr. by G. Belkov. 1962, 20p. 14 refs. NRCC Technical Trans. 1032.
Order from NRCC $1.00 NRCC C-4041

Trans. of Nauch[no]-Issled[ovatel'skii] Inst[itut] Aeroklimatologii, Leningrad. Trudy (USSR) 1958, no. 6, p. 52-63.

DESCRIPTORS: *Wheat, Climatic factors, *Plants, Growth, Seeds, Agriculture, Production, Soils, Precipitation.

Panchenko, A. Ya. and Vasil'ev, D. S.
SCIENCE HOLDS INEXHAUSTIBLE RESOURCES FOR PRODUCTION (V Nauke Neischerpaemye Reservy Proizvodstva). 2 Mar 62, 16p. Trans. A-1327
Order from OTS or SLA $1.60 62-23566

Trans. of Zemledelie (USSR) 1961, v. 23, no. 4, p. 33-39.

DESCRIPTORS: *Science, *Agriculture, Production, Oils, *Plants, *Vegetable oils, Production.

Stonov, Leonid Dmitrievich.
DEFOLIANTS AND DESICCANTS. 23 Aug 62, 147p. 67 refs. JPRS: 14940.
Order from OTS $3.00 62-11739

Trans. of mono. Defolianty i Desikanty, Moscow, 1961, 100p.

DESCRIPTORS: *Desiccants, *Herbicides, Calcium compounds, Cyanamides, Magnesium compounds, Chlorides, Chlorates, Sodium compounds, Phthalic acids, Phenols, *Agricultural machinery, Plants, *Cotton, *Beets, *Potatoes, *Cereals.

This book discusses the materials that are used for the removal of cotton leaves (defoliation), as well as materials for the preharvest drying of a number of grain and technical crops (desiccation). The preharvest removal of the cotton leaves makes it possible to mechanize the harvesting. During the drying of the seeds of legumes, sugar beets, corn, millet, rice, and other crops prior to cutting, the maturing of these crops is accelerated. The brochure is intended for agrochemists, agronomists, brigade leaders of collective farms (colfarms), state farm directors, workers at the experimental research establishments, as well as for party and economic organizations. (Author)

ASTRONOMY

BULLETIN OF THE INSTITUTE OF THEORETICAL ASTRONOMY, ACADEMY OF SCIENCE USSR, 1953, VOL. 5, NO. 8(71): [SELECTED ARTICLES]. [1962] [184]p. 48 refs. ACIC RR-40.
Order from OTS or SLA $13.00 62-15988

Trans. of Akademiya Nauk SSSR. Institut Teoreticheskoi Astronomii. Byulleten', 1953, v. 5, no. 8(71) p. 461-559.

DESCRIPTORS: Astronomy, *Astronomical data, Navigation charts, *Moon, *Computers.

Contents:
Summary of the Conference on the "Astronomical Yearbook of the USSR"
The Astronomical Yearbook of the USSR and the basic tasks of ephemeris astronomy, by M. F. Subbotin
"The Astronomical Yearbook of the USSR", a brief historical review of the establishment of the 'Yearbook', by A. M. Gizhitskii
The history of the compilation of nautical and aerial astronomical ephemerides in our country, by I. D. Zhongolovich
Mechanization of astronomical computations, by D. K. Kulikov
Obtaining lunar ephemerides using analytic computers, by D. V. Zagrebin.

Barkasz, Emil and Tarczy-Hornoch, Antal.
ALGEBRAIC SOLUTION OF THE KEPLER EQUATION WITHOUT ITERATION (Kepler Egyenletenek Iteracio Nelkuli Megoldasa). 8 Mar 61 [6]p. JPRS: 7906.
Order from OTS or SLA $1.10 62-19238

Trans. of Magyar Tudomanyos Akademia Muszaki Tudomanyok Osztalyanak Kozlemenyei (Hungary) 1960, v. 25, no. 1/4, p. 239-240.

DESCRIPTORS: *Celestial mechanics, Mechanics, Astronomy, *Algebra, Series.

The centric angle E sought ("eccentric anomalia") may be calculated with the aid of

$$E = \xi + z$$

where ξ is given by

$$\left(\operatorname{tg} \xi = \frac{\operatorname{tg} M}{b}\right).$$

and

$$z = \frac{\sin \xi \sqrt{\beta^2 \quad m^2 k^3} - mn}{\beta^2},$$

where

$$m = \frac{\xi - M}{\varepsilon}$$

$$n = \frac{1}{\varepsilon} - k \cos \xi, \quad \beta^2 = n^2 + k^2 \sin^2 \xi .$$

and $k = \frac{\sin zk}{zk} = f(\xi, \varepsilon)$, a finite number. By using this method, the speed of computation is approximately identical with that of iteration conventionally used. (Author)

Burunsuzyan, E. S.
THRESHOLD OF RELIABLE DETECTION AND LIMITING SENSITIVITY OF RADIO TELESCOPES. [1961] 12p. MDF B-174 [AFCRL 35].
Order from OTS $0.50 62-11566

Trans. of A[kademiya] N[auk] Arm[yanskoi] SSR [Erevan]. Iz[vestiya]. [Seriya] Fiz[iko]-Mate[maticheskikh] Nauk, 1960, v. 13, no. 1, p. 141-151.

DESCRIPTORS: *Radio astronomy, Telescopes, Sensitivity, Detection, *Communications theory, Radio interference, Radio signals, Statistical analysis.

The threshold sensitivity of radio telescopes which will guarantee almost reliable detection of discrete sources is estimated by the method of statistical communication theory.

Kalachev, P. D., Karachun, A. M. and others.
THE 22-m PARABOLIC REFLECTOR RADIOTELESCOPE OF THE PHYSICS INSTITUTE (FIAN) USSR ACADEMY OF SCIENCES [AND] STUDY OF SOME OF THE ELECTRICAL PARAMETERS OF THE ANTENNA OF THE 22-m RADIOTELESCOPE OF THE PHYSICS INSTITUTE, USSR ACADEMY OF SCIENCES. [1962] [15]p. 13 refs. [DSIR] NLL M.4830.
Order from OTS or SLA $1.60 62-24874

Trans. of #Radiotekhnika i Elektronika (USSR) 1961, v. 6, no. 3, p. 422-436.
Another trans. of p. 422-429 is available from OTS or SLA $1.60 as 62-24410, MCL-1086, 19 Sep 61 [13]p.

DESCRIPTORS: *Radio astronomy, *Telescopes, *Reflectors, Design, Construction, *Parabolic bodies.

For abstract see Technical Translations 8: 5, 1962.

Kobrin, M. M.
ON THE PHASE RADAR METHOD OF MEASURING THE DISTANCE TO THE MOON. [1961] 6p. 6 refs. MDF K-125.
Order from OTS or SLA $1.10 62-23163

Trans. of mono. [paper] presented at the Conference on Questions of Cosmogony, "Radio Astronomy" (no. 5) Moscow, 1956. Trudy, p. 141-146.
Another trans. is available from SLA as R-01768.

DESCRIPTORS: *Phase measurement, *Radio astronomy, *Moon, Radio signals, Frequency modulation, *Radar equipment, *Range finding, Radar reflections, Phase meters, Astronomy.

We propose to use the phase method to measure the distance to the moon. (Author)

Pushkov, N. V.
MAGNETISM IN SPACE (Magnetizm v Kosmose). 18 Apr 62 [66]p. JPRS: 13505.
Order from OTS or SLA $6.60 62-24017

Trans. of [Vsesoyuznoe Obshchestvo po Rasprostraneniya Politicheskikh i Nauchnykh Znanii]. Seriya 9 (USSR) 1961, no. 15, 48p.

DESCRIPTORS: *Terrestrial magnetism, *Magnetic fields, Satellite vehicles, Rockets, Ionosphere, Magnetic storms, *Earth, Cosmic rays, Planets, *Magnetism, Magnetometers, Electric currents, *Moon.

This brochure describes research work on terrestrial magnetism and cosmic bodies conducted with the aid of satellites and cosmic rockets. The author presents the results of measurements of magnetic fields of the earth and the moon, performed with the aid of satellites and rockets, and explains their significance for the science dealing with cosmic magnetism. This brochure is intended for a wide circle of readers who are not specialists. However, it is also of interest to those people who are somewhat familiar with phenomena concerned with terrestrial magnetism. This brochure is based on material presented during public lectures given by the author at the Polytechnic Museum in Moscow during the summer of 1960. (Soviet publisher's announcement)

Sytinskaya, N. N.
PROBABLE DIMENSIONS OF ROUGHNESS OF LUNAR MICROTOPOGRAPHY (Veroyatnye Razmery Nervnostei Mikrorelefa Lunnoi Poverkhnosti). [1962] [8]p. 10 refs.
Order from OTS or SLA $1.10 62-14795

Trans. of [Akademiya Nauk SSSR]. Komissiya po Fizike Planet. Izvestiya, 1959, no. 1, p. 81-84. Another trans. is available from ARS in Its Journal, v. 32, no. 3, $3.00

DESCRIPTORS: *Moon, Surface properties, Light, Reflection, Optics.

An evaluation is made of the dimensions of microfeatures of the lunar surface by comparing the characteristics of radiation reflected by the lunar surface in the optical range (considerable roughness) with that in the decimeter range (specular reflection). Mean dimensions of roughness appear to be on the order of several millimeters or centimeters. (Author)

Zhongolovich, I. D. and Amelin, V. M.
COLLECTION OF TABLES AND NOMOGRAMS FOR THE PROCESSING OF OBSERVATIONS MADE ON ARTIFICIAL EARTH SATELLITES, tr. by P. Basu. Mathematical Tables, v. 12. 1961, 1v.
Order from PP £5

Trans. of mono. [Sbornik Tablits i Nomogramm dlya Obrabotki Nablyudenii Iskusstvennykh Sputnikov Zemli, Moscow, 1960, 188p.].

DESCRIPTORS: *Astronomical data, Nomographs, Tables, *Mathematical analysis, *Satellite vehicles.

BEHAVIORAL SCIENCES

COMPOSITION OF THE YUGOSLAV CADRE OF PHYSICIANS (ACCORDING TO THE CENSUS OF 30 JUNE 61). 26 June 62 [14]p. 1 ref. JPRS: 14280.
Order from OTS or SLA $1.60 62-25525

Trans. of Jugoslovenski Pregled, 1962 [v. 6] no. 3, p. 131-136.

DESCRIPTORS: *Professional personnel, Medicine, Public health, *Medical personnel.

NEW HUNGARIAN DOCTORS AND CANDIDATES. 26 June 62 [6]p. JPRS: 14281.
Order from OTS or SLA $1.10 62-25523

Trans. of Magyar Tudomany (Hungary) 1962, v. 7[69] no. 2, p. 112-113.

DESCRIPTORS: *Scientific personnel, *Professional personnel, *Engineering personnel, Personnel, *Hungary.

Petrov, E.
COSMONAUTS [PTS. 1-2]. 5 Apr 62 [17]p. FTD-TT-62-344.
Order from OTS or SLA $1.60 62-24340

Unedited rough draft trans. from Krasnaya Zvezda (USSR) 1962, 13 Feb, p. 2 and 15 Feb, p. 2.

DESCRIPTORS: *Astronauts, Training, Space medicine, Medical personnel, *Pilots, Communism, Spaceships, Engineering personnel.

Four "party-line" newspaper stories are presented. The first, entitled, Your hand, Doctor!, praises the doctors who trained the cosmonauts; the second, entitled, If you are a Communist, describes the Communists as "people who are sympathetic and generous with heartfelt warmth"; the third, entitled, They Performed a Miracle, praises the engineers and designers who produced Titov's space ship; and the fourth, entitled, Not Gods, But Experts, assures the reader that the space ship "was made conscientiously by working people."

Psychology

Adrianov, O. S. and Rabinovich, M. Ya.
MECHANISMS AND LOCALIZATION OF THE SWITCHING FUNCTION OF THE BRAIN. 26 Feb 62 [29]p. 109 refs. JPRS: 12739.
Order from OTS or SLA $2.60 62-23408

Trans. of mono. Nekotorye Teoreticheskie Voprosy Stroeniya i Deyatel'nosti Mozga (Theoretical Questions on Brain Structure and Activity) Moscow, 1960, p. 152-178.

DESCRIPTORS: *Conditioned reflex, Cerebral cortex, *Brain, Nerves, *Neuromuscular transmission, Physiology, *Neurology, Autonomic nervous system, Psychology.

Itel'son, L. B.
CYBERNETICS AND PROBLEMS OF WORK PSYCHOLOGY. 27 June 62 [39]p. 1 ref. JPRS: 14297.
Order from OTS or SLA $3.60 62-25535

Trans. of Voprosy Filosofii (USSR) 1962 [v. 16] no. 4, p. 32-46.

DESCRIPTORS: *Cybernetics, *Industrial psychology, Control systems, Applied psychology.

Novlyanskaya, K. A.
CHILD PSYCHIATRY: SURVEY OF FOREIGN LITERATURE FOR THE PAST DECADE. [1962] 21p. 10 refs. [NIH] no. 281.
Order from OTS or SLA $2.60 62-23537

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1956, v. 56, no. 9, p. 757-763.

DESCRIPTORS: *Psychiatry, *Children, Personality, Psychoneuroses, Psychotherapy, Psychosomatic Medicine, *Pediatrics

BIOLOGICAL SCIENCES

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNAL: BIOLOGY, 1961, NOS. 8-17. 13 June 62 [37]p. JPRS: 14104.
Order from OTS or SLA $3.60 62-25188

Trans. of selected abstracts from Referativnyi Zhurnal. Biologiya (USSR) 1961, nos. 8-17.

DESCRIPTORS: *Biology, Abstracting, Microbiology, Plants, Growth, Soils, Parasites, Animals, Man, Physiology, Pharmacology, Toxicity, Pathology, Tumors, Tissues (Biology), China

CYTOLOGY, 1961, VOL. 3, NO. 5. 1 Mar 62 [218]p. JPRS: 12752.
Order from OTS or SLA $14.50 62-23350

Trans. of Tsitologiya (USSR) 1961, v. 3, no. 5, p. 501-628.

DESCRIPTORS: Conferences, *Histology, *Mitosis, *Cells (Biology), *Tissues (Biology), Epithelium, *Nuclei (Biology), Growth, *Embryology, Testes, Spermatogenesis, Nerves, Ganglia, Spinal cord, Stimulation, Nucleic acids, Lymphocytes, Spleen, Liver cells, *Radiation effects, Radio-protective drugs, Morphology, *Cytochemistry, Genetics, Ciliata, Amoeba, Protozoa, Temperature, Muscles, Glucose, Succinic acid, Dehydrogenases, *Climatic factors, Enzymes, Anoxia, Adjustment (Psychology), Sex, Age, Fishes, Proteins, Sensitivity, Hyaluronic acid, Thiols, Ions, Determination, Glass electrodes.

NATURE, 1960 [VOL. 49] NO. 4: [SELECTED ARTICLES]. 12 July 62 [22]p. 18 refs. JPRS: 14447.
Order from OTS or SLA $2.60 62-25989

Trans. of Priroda (USSR) 1960 [v. 49] no. 4, p. 3-11 and 104-105.

DESCRIPTORS: *Philosophy, *Biology, Physiology, Soils, Fertility, Science, *Agriculture, *Electromagnetic fields, *Nervous system

Contents:
V. I. Lenin and philosophical problems of biology, by I. I. Novinskii
Science for agriculture
The effect of an electromagnetic field on the central nervous system, by Yu. A. Kholodov

SCIENCE BULLETIN, 1961, NO. 11: [SELECTED] TRANSLATIONS. 22 June 62 [69]p. 13 refs. JPRS: 14223.
Order from OTS or SLA $6.60 62-25468

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1961, no. 11, p. 1-11, 34-37, 43-48.

DESCRIPTORS: *Geology, China, Terrain, *Civil engineering, *Neurology, Nervous system, Morphology, *Tumors, Drugs, *Chemotherapy, *Amino acids, Phenylalanine, *Agriculture, *Fertilizers, *Plants, *Wheat, Growth, Physiology.

Contents:
The present status of Karst research in China, by Ku Teh-chen
The development of neuromorphology, by Lu Tzu-hui
Chemotherapy of tumors. VII. The synthesis of para, meta, and ortho (bis - (2-chloroethyl)-aminoethyl)-phenylalanine, by Jen Yun-feng and others
High yields from control of water and fertilizer use based on the physiological properties of winter wheat, by Li Hsueh-chu.

Marki, Alpar.
ACTIVITIES OF THE CLUJ BIOLOGICAL RESEARCH CENTER IN RUMANIA. 6 June 62 [8]p. JPRS: 14027.
Order from OTS or SLA $1.10 62-25048

Trans. of Korunk (Rumania) 1962, v. 21, no. 2, p. 217-221.

DESCRIPTORS: *Scientific organizations, *Biology, Scientific research, Plants, Animals, Physiology, Genetics, *Medical research, *Rumania.

Natradze, A. G.
PRODUCTION OF MEDICINAL PREPARATIONS AND MEDICAL EQUIPMENT ITEMS IN THE PERIOD 1959-65. 3 July 62 [107]p. JPRS: 14361.
Order from OTS or SLA $9.10 62-25595

Trans. of mono. (booklet) Proizvodstvo Lekarstvennykh Preparatov i Izdelii Meditsinskoi Tekhniki v 1959-65 Gg., Moscow, 1961, 64p.

DESCRIPTORS: *Drugs, *Medical equipment, Industrial production, Chemotherapeutic agents, Antibiotics, Public health.

Rostas, Oszkar.
INTERNATIONAL MEDICAL RELATIONS OF HUNGARY. 25 June 62 [8]p. JPRS: 14264.
Order from OTS or SLA $1.10 62-25521

Trans. of Nepegeszsegugy (Hungary) 1962, v. 43, no. 3, p. 65-68.

DESCRIPTORS: *Medicine, *Medical research, *Professional personnel, Public health, *Hungary, Conferences.

Stanek, Ivan.
PROF. DR ZDENEK FRANKENBERGER, CZECHOSLOVAK BIOLOGIST AND EMBRYOLOGIST: BIOGRAPHIC DATA. 22 June 62 [8]p. JPRS: 14233.
Order from OTS or SLA $1.10 62-25489

Trans. of Biologia (Czechoslovakia) 1962, v. 17, no. 1, p. 71-73.

DESCRIPTORS: *Scientific personnel, Morphology, Embryology, Biology.

Anatomy and Physiology

HYGIENE OF LABOR AND OCCUPATIONAL DISEASE, 1962, NO. 4: SELECTED ARTICLES. 26 June 62 [38]p. 22 refs. JPRS: 14279.
Order from OTS or SLA $3.60 62-25522

Trans. of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1962 [v. 6] no. 4, p. 14-21, 26-35, 56-60.

DESCRIPTORS: *Industrial medicine, *Public health, *Labor, *Diseases, Etiology, Electroencephalography, Vibration, Physiology, Air, Impurities, Organic compounds, Toxicity, Nervous system, Blood vessels, Permeability, Sodium, Radioactive isotopes, Radiation injuries, Radiobiology.

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PHYSIOLOGY JOURNAL, 1962, VOL. 48, NO. 1: EXCERPTS. 27 June 62 [19]p. 5 refs. JPRS: 14302.
Order from OTS or SLA $1.60 62-25530

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 1, p. 97-103 and 108-111.

DESCRIPTORS: *Respiration, *Pressure breathing, Lungs, *Sensory perception, Hearing, Vision, *Physiology, Analyzers (Psychology)

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Reports on problems of the physiology of analyzers, by V. D. Glezer and E. A. Radionova

SOVIET STUDIES ON THE EFFECTS OF WEIGHTLESSNESS AND PHYSICAL EXERTION. 10 Aug 62, 30p. 23 refs. JPRS: 14796.
Order from OTS $1.00 62-11732

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1962, v. 12, no. 2, p. 202-207 and 332-337.

DESCRIPTORS: *Weightlessness, Exercise, *Bioelectronics, *Brain, Nervous system, *Acceleration, Acceleration tolerance, Conditioned reflex, *Reaction (Physiology), Blood circulation.

Contents:
Changes in the biopotentials of the human brain in connection with physical work, by M. P. Ivanova
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Bini, Gustavo.
ON A CASE OF ATTEMPTED SUICIDE IN JAIL BY INGESTION OF GLASS SHARDS (Su di un Caso di Tentato Suicidio in Carcere Mediante Ingestione di Schegge di Vetro). [1962] [12]p. (foreign text included).
Order from SLA $1.60 62-16134

Trans. of Minerva Medicolegale (Italy) 1951 [v. 71] p. 136-139.

DESCRIPTORS: *Glass, Particles, Consumption, *Digestive system, *Criminology, Physiology, Poisons, Injuries, *Psychology, Behavior.

Biryukov, D. A., Vedyaev, F. P. and others.
A SUBSTANTIAL CONTRIBTUION TO THE DEVELOPMENT OF COMPARATIVE PHYSIOLOGY: REVIEW OF A BOOK BY KH. S. KOSHTOYANTS. [1961] [8]p. 1 ref.
Order from OTS or SLA $1.10 62-13774

Trans. of #Fiziol[ogicheskii] Zh[urnal] SSSR, 1958, v. 44, no. 6, p. 595-598 (review of mono. Osnovy Sravintel'noi Fisiologii: Sravintel'naya Fiziologiya Nervnoi Sistemy (Principles of Comparative Physiology. v. 2: The Comparative Physiology of the Nervous System) Moscow, 1957, 635p.).

DESCRIPTORS: *Physiology, *Man, Animals, Nervous system, Growth, Tissues (Biology), Nerves, Muscles, Conditioned reflex

Chagovets, R. V., Lakhno, E. V. and others.
A COMPARATIVE STUDY OF THE EFFECT ON METABOLIC PROCESSES IN THE NERVE TISSUE OF PHYSICAL COOLING AMINASINE, AND Na-EVIPAN. [1962] [17]p. 14 refs.
Order from OTS or SLA $1.60 62-14729

Trans. of mono. [Voprosy Biokhimii Nervnoi Sistemy] (Problems in the Biochemistry of the Nervous System) [ed. by] A. V. Palladin, Kiev, 1957, chap. 23, p. 258-267.

DESCRIPTORS: *Metabolism, Dehydrogenases, Phosphorus compounds, Thiamine, Ascorbic acid, *Nervous system, Body temperature, *Hypothermia, Drugs, *Chlorpromazine, *Barbituates.

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Guenetchev, T.
THE HISTOCHEMICAL MODIFICATIONS OF GLYCOGEN LEVEL IN THE CENTRAL NERVOUS SYSTEM OF GUINEA PIGS AFTER ELECTROSHOCK. [1962] [1]p.
Order from SLA $1.10 62-14728

Partial trans. (summary) of Russian (?) article from an unidentified source, nid.

DESCRIPTORS: *Cytochemistry, *Glycogen, *Nervous system, *Electroshock, Ganglia, Cells (Biology)

With the action of the electroshock the glycogen content decreased in the cerebral cortex, the spinal cord, and in the granulas of the white substance, but it was maintained or even increased in the teleglial cells of the white substance. The block of the electroshock was accompanied with a significant increase of the glycogen content in the central nervous system and in the neurons of the ganglia lunatis. In the period after the electric block, the reserves of carbohydrate decreased again.

Guseva, L. A.
CHANGE OF GLYCOGEN CONTENT IN THE LIVER AND MUSCLES OF ANIMALS ADAPTED TO COLD AND ANIMALS NOT ADAPTED TO COLD. 6 June 62 [19]p. 19 refs. JPRS: 14032.
Order from OTS or SLA $1.60 62-25054

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, no. 2, p. 199-204.

DESCRIPTORS: *Hypothermia, Body temperature, *Glycogen, Liver, Muscles

Animals adapted to low temperature display greater resistance to temperature reaction during hypothermia. On the contrary, animals not adapted to cold, and particularly the animals which were maintained at room temperature and which were receiving food uninterruptedly, displayed a sharp decrease of body temperature during hypothermia. In animals adapted and not adapted to cold, the glycogen content in the liver decreases upon exposure. However, in animals adapted to cold, this decrease in glycogen content after one hour of exposure averaged 29% and in nonadapted ones 75%. The glycogen content in muscles upon exposure decreases in a lesser degree than in the liver and equally in animals both adapted and not adapted to cold. (Author)

Kiknadzo, V. D.
DATA CONCERNING THE STUDY OF THE EFFECT OF THE LIVER ON CIRCULATORY PROCESSES: [SELECTED PARTS]. 8 Mar 62 [13]p. JPRS: 12910.
Order from OTS or SLA $1.60 62-23404

Trans. of mono. Materialy k Izucheniyu Vliyaniya Pecheni na Protsessy Krovetvoreniya, Tbilisi, 1960, p. 11-12, 23-24, 27-29, 33-36, 42-43, 60-67.

DESCRIPTORS: *Surgery, *Liver, Excision, *Physiology, *Blood forming organs, Leukocytes, Erythrocytes, *Bone marrow, *Regeneration, Tissues (Biology), Blood circulation, Inhibition, Anemia.

Hepatic parenchyma of animals (dog, cat) possesses a great capacity for regeneration, as a consequence of which changes obtained in blood formation and exchange processes are rapidly regenerated. The degree of liver function deficiency after extensive resection depends on the size of the resectioned portion. Observed changes in the composition of the peripheral blood after liver resection cannot be explained merely by neuro-reflex mechanisms, and the well-defined reaction in the bone marrow indicates the involvement of the liver in the regulation of peripheral blood composition. Extensive liver resection causes profound changes in the blood formation processes in the bone marrow, characterized by an abrupt oppression of erythropoiesis. Phases of cell proliferation and differentiation are disturbed. Macroblastic change and peripheral macrocytosis of erythrocytes, often effused into macrocyte anemia, constitute the consequence of profound disturbance of the erythropoiesis process. Characteristic changes in erythropoiesis observed during extensive resection of the liver and acute diffuse damage to its parenchyma depend on elimination of the hemopoietic (erythropoietic) function of the liver. The central nervous system regulates hemopoietin exchange in the liver. Experimental data confirm the hypothesis that antianemic substance receives its final form only after passing to the liver.

Laborit, H., Coribault, R., and Guiot, G.
THE NEUROMUSCULAR EXCITABILITY PHYSIOLOGICAL AND CLINICAL SIGNIFICANCE. [1962] 16p. (7 figs. 10 refs. omitted) 1 ref.
Order from SLA $1.60 62-14588

Trans. of la Presse Médicale (France) 1957, v. 65, no. 25, p. 571-573.

DESCRIPTORS: *Neuromuscular transmission, Excitation, *Bioelectronics, Nerves, Cells (Biology), *Metabolism, *Ion exchange, Physiology.

The authors show that clinically and experimentally the variations observed of the neuromuscular excitation which go in parallel with the transmembranic ion exchanges, are explainable only on the base of variation of regulations of the cell metabolism. These facts lead them to consider the cellular functioning as a selfregulated system. The cellular excitability seems to be a physiologic expression of the rate with which the electron flux and the shifting of the H- ions (displacement) occur along the biocatalytic chain. This explains nicely the differences between homologuous nerves and homologuous muscles, and the pathological changes found. (Author)

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Manykyan, L. E.
EXCHANGE OF PHOSPHORUS OF NUCLEIC ACIDS AND PHOSPHOLIPIDES IN THE BRAIN OF RABBITS DURING ONTOGENESIS. [1962] [11]p. 6 refs.
Order from OTS or SLA $1.60 62-14706

Trans. of Akad[emiya] Nauk SSSR. Doklady [1955] v. 102 [no. 3] p. 567-570.

DESCRIPTORS: *Nucleic acids, *Phospholipids, Phosphorus, Labeled substances, *Brain, Cerebral cortex, Growth, Embryos, Rabbits.

The relative rate of exchange of the nucleic acids and the phospholipid contents in various parts of the brain and in the spinal cord was determined at several stages of the embryonic and post-embryonic development of rabbits. This was done with the aid of subcutaneous injections of radiophosphorus. No constant ratio was found between the shift of nucleic acid content during ontogeny and the restoration rates of these substances. It appears, however, that the retardation of phospholipid exchange coincides with an intensified accumulation of phospholipids in the brain tissue. The latter phenomenon may be associated with the process of nerve fiber myelination.

Markova, I. V.
SORPTION PROPERTIES OF BRAIN TISSUE OF NEWBORN AND ADULT RATS. [1962] 3p. 5 refs.
Order from OTS or SLA $1.10 62-14738

Trans. of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1961, v. 52 [no. 8] p. 110-111.

DESCRIPTORS: *Absorption, *Brain, *Tissues (Biology), Age, Rats, Adrenal glands, Pituitary gland,

Experiments showed that the sorption properties of the tissue of adult rats is considerably higher than in newborn animals. Adrenalectomy apparently does not change the sorption properties of the brain.

Mazanec, Karel and Havelka, Bohumil.
CONTRIBUTION TO THE HISTOCHEMISTRY OF THE CORNEA (Prispevek k Histochemii Rohovky) tr. by W. H. Everhardy. 15 Apr 59, 22p. (drawings omitted) 16 refs.
Order from OTS or SLA $2.60 59-14769

Trans. of Ceskoslovenska Morfologie, 1955, v. 3, no. 2, p. 157-167.

DESCRIPTORS: *Cornea, Eye, Tissues (Biology), *Histology, Biological stains, Biochemical tests, *Mucosaccharides, *Lipids, Lipoproteins.

Various staining and testing procedures were employed to determine the histochemical appearance and stratification of characteristic polysaccharides and lipids in the constituents of the cornea. Material was obtained from the eyeballs of hogs and of humans at several stages of ontogeny. Overall, the cornea is made up of a thick layer of acid mucopolysacchrides, separated on both sides from the aqueous medium by layers of lipoprotein. With increasing age the polysacchride components of Bowman's membrane and the perilamellar envelopes are displaced by lipid components. This change spreads uniformly from the periphery toward the center. The thickness and stratification of the lipoprotein layer in Descmet's membrane also increases with age.

Narikashvili, S. P., Meliya, A. S. and others.
ELECTROMYOGRAPHIC ANALYSIS OF THE STABILITY OF THE POSTURE OF RIFLEMEN UNDER CONDITIONS OF TRAINING AND COMPETITION. 2 27 June 62 [12]p. JPRS: 14301.
Order from OTS or SLA $1.60 62-25536

Trans. of Teoriya i Praktika Fizicheskoi Kul'tury (USSR) 1961, v. 24, no. 9, p. 701-706.

DESCRIPTORS: *Electromyography, *Posture, Man, *Training, Stability, Muscles, Small arms, Recreation.

Investigations on outstanding sportsmen of the Soviet Union, champions, and record holders of the world, indicate that, as the result of prolonged training, riflemen achieve in firing in a standing position an arrangement of various links of the torso and extremities (together with the weapon) which does not require more or less pronounced muscular activity in order to maintain body balance and weapon stability.

Podoba, J.
TEN YEARS OF THE ENDOCRINOLOGICAL INSTITUTE IN BRATISLAVA. 6 June 62 [5]p. JPRS: 14028.
Order from OTS or SLA $1.10 62-25047

Trans. of Bratislavske Lekarske Listy (Czechoslovakia) 1962, v. 42, no. 6, p. 321-322.

DESCRIPTORS: Scientific organizations, Scientific research, *Endocrine glands, *Medical research.

Policard, A., Collet, A., and Martin, J. C.
ELECTRON MICROSCOPIC RESEARCHES ON VARIOUS INFRASTRUCTURES OF THE BLOOD VESSELS OF THE LYMPHATIC GANGLIA (Recherches au Microscope Electronique sur Diverses Infrastructures des Voies Sanguines des Ganglions Lymphatiques). [1962] [11]p. (6 figs. omitted) 12 refs.
Order from SLA $1.60 62-14855

Trans. of Z[eit]schr[ift für] Zellforsch[ung und Mikroskopische Anatomie] (Germany) 1962, v. 56 [no. 2] p. 203-212.

DESCRIPTORS: *Electron microscopy, *Histology, *Blood vessels, Epithelium, *Lymphatic system, Glands, Ganglia, *Capillaries, Lymphocytes.

Examination with the electron microscope of the blood vessels of the lymphatic ganglia of the rat and guinea pig (popliteal and mediastinal ganglia) permit defining

a certain number of structures at the level of the capillaries and postcapillary venules. Blood capillaries of the usual type are observed, capillaries with a double basal membrane with a relatively thick endothelium. The postcapillary venules have a complex structure: multilamellar basal membrane, high endothelial cells infiltrated with lymphocytes and fusiform cells in the vicinity of the basal membrane. A departure of the lymphocytes from the blood seems to occur at this level. (Author)

Polyakov, G. I.
ON THE STRUCTURAL ORGANIZATION OF NEURON INTERRELATIONSHIPS IN THE HUMAN CEREBRAL CORTEX. 30 Mar 62 [18]p. JPRS: 13325.
Order from OTS or SLA $1.60 62-23828

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962, v. 17, no. 1, p. 77-87.

DESCRIPTORS: *Nerves, *Cells (Biology), *Neuromuscular transmission, *Cerebral cortex, Brain, Anatomy.

A survey shows that cortical organization is built on the principle of a multiple-layered construction. Complexly interlinked, arranged in the layers within the transverse section of the cortex, neuron groups establish various forms of connections both within the limits of the cortex itself, and between the cortex and the subcortical brain formations. The composition of the cyto-and myeloarchitectonic cortical layers, reflecting the topographical interrelation between cellular and fiber elements within the transverse section of the cortex, is determined by a basic scheme of spatial arrangement of zones of synaptic linkages between different categories of afferents and the corresponding groups of efferent neurons. The zones of synaptic linkages are adapted to the horizontally oriented axon joinings, localized in definite architectonic layers and sub-layers of the cortex. These formations play a substantial role in the functional unification and coordination of interneuron linkages, terminating and originating in different levels of the transverse section of the cortex (in distinction from its layers and cavities). The zonal layer of the cortex is a mechanism which secures the consolidation of the basic mass of cortical efferents into one functioning whole. (Author)

Rabinovich, M. Y. and Glaser, I. I.
METHODS OF RECORDING THE ELECTRICAL ACTIVITY OF INDIVIDUAL LAYERS OF THE CEREBRAL CORTEX IN CHRONIC EXPERIMENTS. [1962] [9]p. 3 refs.
Order from OTS or SLA $1.10 62-14719

Trans. of #Zhurn[al] Vyssh[ei] Nervn[oi] Deyat-[el'nosti] (USSR) 1960, v. 10, no. 4, p. 630-633.

DESCRIPTORS: *Bioelectronics, *Cerebral cortex, Electrical properties, *Electroencephalography, Conditioned reflex, Reaction (Psychology), Auditory perception, Recording devices, *Laboratory equipment.

Reichardt, Werner.
ON THE OPTICAL RESOLVING POWER OF THE FACET EYES OF LIMULUS. [1962] 39p. 41 refs.
Order from SLA $3.60 62-16587

Trans. of special reprint of Kybernetik (Germany) 1961, v. 1, no. 2, p. 57-69.

DESCRIPTORS: *Eye, *Compound eye, *Vision, *Arachnids, Inhibition, Stimulation, Light, Reaction (Physiology).

Vial.
[FATIGUE]. [1962] 27p. (illus. omitted).
Order from SLA $2.60 62-14587

Partial trans. of doctor's thesis, Grenoble U. (France)

DESCRIPTORS: *Fatigue (Physiology), *Neuromuscular transmission, Physical fitness, Metabolism, Endocrine glands, Potassium, Sleep, Psychology, Emotions, Anxiety

Vladimirova, E. A.
ON THE INITIAL PHASE OF EXCITATION WITH ABSOLUTE DIFFERENTIATION AND WITH THE PRESENCE OF FREE AMMONIA IN THE LARGE CEREBRAL HEMISPHERES OF RATS. [1962] [7]p. (5 figs. omitted) 8 refs.
Order from OTS or SLA $1.10 62-14747

Trans. of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1961 [v. 51] no. 2, p. 42-45.

DESCRIPTORS: Excitation, Inhibition, Reaction (Physiology), *Cerebral cortex, Metabolism, Nervous system, *Ammonia, *Conditioned reflex, Brain, Rats

Biochemical investigations of the brain lead to the observation that differences in the metabolism of the C. N. S. during the initial seconds of absolute differentiation of various degrees of intensity (or stability), even if the character of the differentiating reactions is identical, do exist. The absence of specific rise in ammonia level in the brain of rats during the first 5 seconds of especially firmly established absolute differentiation is caused, apparently, by the sharp, marked contraction of the initial phase of excitation and the strengthening of the concentration of inhibitory processes. Apparently both the degree of strength of the differentiation and the nature of the unconditioned stimulus affect the formation of the differentiating inhibitory processes and the metabolism of ammonia in the brain. (Author)

Biochemistry

BIOCHEMICAL STUDIES. 1 June 62 [38]p. 52 refs. JPRS: 13962.
Order from OTS or SLA $3.60 62-24969

Trans. of Nauchnye Doklady Vysshei Shkoly. Biologicheskie Nauki (USSR) 1962, no. 1, p. 51-53, 57-61, 88-92, 98-104, 159-164.

DESCRIPTORS: *Lipids, Cells (Biology) *Biochemistry, *Chemoreceptors, *Insects, Ticks, *Bioelectronics, Arthropods, Snake venom, Bee venom, Nervous system, *Skin, Regeneration, *Radiation effects, Oleic acids, Oxides, Pathology, Amino acids, Colloids.

Contents:
The origin of lipid inclusions of somatic cells, by I. B. Tokin
Study of chemoraception of insects and ticks: Electrophysiological study of chemoreception in the field cricket, by Yu. A. Elizarov
The effect of intoxication with animal venoms on higher nervous activity of mammals, by N. M. Artemov
The action of stimulant of the regeneratory processes on the epidermis of the roentgenized rabbit skin, by A. A. Braun and G. P. Zemlyanaya
Radiomimetric properties of oxidized oleic acid, by Yu. B. Kudryashov
The introduction of amino acids into coacervates, by T. N. Ereinova and others.

SOVIET BIOCHEMISTRY STUDIES ON BLOOD AND METABOLISM. 26 Apr 62 [20]p. 23 refs: JPRS: 13555.
Order from OTS or SLA $1.60 62-24244

Trans. of Voprosy Pitaniya (USSR) 1962, v. 21, no. 2, p. 37-39 and 76-80.

DESCRIPTORS: Biochemistry, Blood, *Metabolism, Diet, *Carbohydrates, Energy, *Exercise, Muscles, Glucose, Blood sugar, Lactic acid, X-rays, *Radiation sickness, *Thiamine, Radioprotective drugs.

Contents:
The effect of ingestion of malt extract on biochemical changes in the blood of athletes after completing various kinds of exercises, by A. F. Krasnova and N. R. Chagovets
The effect of X-irradiation on thiamine (vitamin B_1) metabolism, by M. M. Kubareva.

Doskochilova, D. and Vondrachek, M.
MICROMETHODS FOR THE IDENTIFICATION AND THE INVESTIGATION OF ANTIBIOTIC MATERIALS FROM ACTINOMYCETAE: CHROMATOGRAPHIC AND ELECTROPHORETIC METHODS. [1962] 21p. (7 figs. refs. Eng. summary omitted).
Order from OTS or SLA $2.60 62-14590

Trans. of #Antibiotiki (USSR) 1961, v. 6, no. 7, p. 649-659.

DESCRIPTORS: Microchemistry, *Identification, *Antibiotics, *Actinomycetes, *Chromatographic analysis, *Electrophoresis, Microanalysis.

Babek, S. F. and Udovenko, V. V.
THE VISCOSITY OF BINARY MIXTURES WITH NICOTINE, IV. [1962] 5p.
Order from K-H $7.25 K-H 3161-a

Trans. of Zhurnal Obshchei Khimii (USSR) 1950, v. 20, no. 12, p. 2121-2123.

DESCRIPTORS: *Viscosity, Mixtures, *Nicotine.

Fleckenstein, A., Janke, J. and others.
ON THE BEHAVIOR OF ADENOSINE TRIPHOSPHATE, ADENOSINE DIPHOSPHATE AND OTHER PHOSPHORIC ACID ESTERS IN THE CONTRACTION OF THE RECTUS OF THE FROG BY MEANS OF ACETYL CHOLINE, NICOTINE AND SUCCINYL BISCHOLINE. [1962] 17p.
Order from K-H $21.25 K-H 3779f

Trans. of unidentified mono., n. p., n. d.

DESCRIPTORS: *Adenosine phosphates, Posphoric acids, Esters, *Muscles, *Acetylcholines, Nicotine, Succinates, *Cholines

Fujiwara, Teruko and Akabori, Shiro.
α,α'-DIAMINOPIMELIC ACID IN CHLORELLA ELLIPSOIDEA, tr. by E. R. Hope. Feb 62, 5p. 20 refs. DSIS T 73 J.
Order from NRCC NRCC C-3946

Trans. of Nihon Kagaku Zasshi (Japan) 1954, v. 75, no. 10, p. 990-993.

DESCRIPTORS: *Amino acids, *Algae, Chromatographic analysis, Carboxylases, Phenols, Nitro radicals, *Carboxylic acids, *Pimelic acids.

Karklin'sh, R. Ya., Agafonova, V. F., and Paegle, A. K.
THE EFFECT OF ZINC ON CITRIC ACID PRODUCTION IN MOLASSES FERMENTATION (O Vliyanii Tsinka na Limonokisloe Sbrazhivanie Rastvorov Melassy) tr. by G. Belkov. 1962, 9p. 2 refs. NRCC Technical trans. 1017.
Order from NRCC $0.50 NRCC C-3968

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Institut Konditerskoi Promyshlennosti. Trudy (USSR) 1958, v. 12, p. 128-133.

DESCRIPTORS: *Zinc, *Citric acids, *Fermentation, Fungi, Cyanides, Iron compounds.

Khachatryan, G. S.
THE ABSORPTION OF GLUCOSE AND PYRORACEMIC ACIDS BY THE BRAIN AND MUSCLE TISSUE AND THE RATE OF THE BLOOD FLOW IN THE BRAIN DURING FOOD AND FOOD CONDITIONED STIMULATION AS WELL AS INTERNAL INHIBITION. [1962] [15]p. 9 refs.
Order from OTS or SLA $1.60 62-14694

Trans. of A[kademiya] N[auk] A[rmyanskoi] SSR [Erevan]. Izvestiya. [Biologicheskie i Sel'skokhozyaistvennye Nauki] 1957, v. 10, no. 6, p. 25-34.

DESCRIPTORS: *Absorption, *Glucose, *Pyruvic acid, Brain, Muscles, Blood circulation, Food, Stimulation, *Conditioned reflex, Inhibition.

The experiments were made with 2 dogs. During food stimulation (sugar) and conditioned food stimulation. in spite of an increase in the rate of the blood flow in the brain, a positive av-difference in glucose and pyroracemic acid was observed. The brain as well as the muscle tissue intensively absorbs glucose and pyroracemic acid and the brain requires considerably more of these two substances than the muscle tissue. With the extinction of the conditioned reflex, i. e., during the development of the cortical inhibition, a gradual decrease was seen in the rate of the blood flow in the brain. The brain and the muscle tissue absorb less glucose and pyroracemic acid and in a number of cases a negative av-difference in the amount of these substances was observed. The brain as a rule absorbs pyroracemic acid even during the inhibition process. With the inhibition process in the background and the action of the sugar saturation affecting the amount of glucose in the blood, the av-difference in its content decreases. The brain, in spite of a decrease in the rate of the blood flow and the muscle as well during the inhibition process continues to absorb little glucose, and sometimes the av-difference in its content becomes negative.

Klein, E. E.
SOURCES OF AMMONIA FORMATIONS IN BRAIN TISSUE. [1962] [1]p.
Order from SLA $1.10 62-14732

[Summary] trans. of unidentified Russian (?) article, n.p., n.d.

DESCRIPTORS: *Brain, Tissues (Biology), *Ammonia, *Adenine deratives, Glutamic acid, Glutaminases.

Laborit, H., Weber, B. and others.
THE EXPERIMENTAL STUDY OF SEVERAL SALTS OF D, L ASPARTIC ACID: PRELIMINARY NOTE. Paper presented at Congress for Anesthesiology (no. 9) 22 May 58. [1962] 21p. (2 figs. 3 tables omitted) 7 refs.
Order from SLA $2.60 62-14589

Trans. of [Anesthesie, Analgesie, Réanimation] (France) 1958, v. 15 [no. 3] p. 480-494.

DESCRIPTORS: *Amino acids, *Aspartic acid, Salts, Ions, *Toxicity, Neuromuscular transmission, Traumatic shock, Respiration, Fatigue (Physiology)

Mardashev, S. R.
INHIBITION OF TRANSAMINATION IN RAT LIVERS BY CYSTEINE. [1962] [5]p. 5 refs.
Order from OTS or SLA $1.10 62-25675

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 133, p. 230-232.

DESCRIPTORS: *Amino acids, *Cysteine, Alanines, Pyruvic acid, Pyridoxine, Phosphates, *Transaminases, *Carboxylases, Rats, Liver

Slices of rat liver were incubated in the presence of asparagine, aspartic acid, glutamine, glutamic acid, and sodium pyruvate. Chromatograms of extracts of the liver indicate that the addition of cysteine inhibits the transamination and decarboxylation of amino acids. Since the reactions are normally catalyzed by pyridoxal phosphate enzymes and the addition of these enzymes reactivate the inhibited reactions, it is postulated that cysteine reacts with the pyridoxal phosphate and thereby renders it ineffective.

Tkeshelashvili, L. K. and Kometyani, P. A.
A STUDY OF BIOCHEMICAL TRANSFORMATIONS OF PHOSPHORYLSERINE IN THE BRAIN. [1962] 1p.
Order from SLA $1.10 62-14776

Trans. of article from an unidentified source, n.d.

DESCRIPTORS: Phosphorylation, *Brain, *Proteins, Amino acids, *Serine, Phospholipids.

Tests showed that phosphorylserine in rat's brain homogenate undergoes both dephosphorylation and decarboxylation.

Zhuravleva, E. I.
THE EFFECT OF SUGAR DECOMPOSITION PRODUCTS IN MOLASSES ON CITRIC ACID FERMENTATION (Vliyanie na Limonokisloe Brozhenie Produktov Razlozheniya Sakharov, Soderzhashchikhsya v Melasse) tr. by G. Belkov. 1962, 14p. 6 refs. NRCC Technical trans. 1018.
Order from NRCC $1.00 NRCC C-3980

Trans. of Vsesoyuznyi Nauchno-Issledovatel'ski Institut Konditerskoi Promyshlennosti. Trudy (USSR) 1958, v. 12, p. 134-141.

DESCRIPTORS: *Carbohydrates, Decomposition, *Citric acids, *Fermentation

Botany

INFORMATION ON PHOTOSYNTHESIS. 26 Apr 62 [35]p. 151 refs. JPRS: 13566.
Order from OTS or SLA $3.60 62-24254

Trans. of mono. K. A. Timiryazev i Uchenie o Fotosinteze (K. A. Timiryazev and the Photosynthesis Theory) Moscow, 1961, p. 155-180.

DESCRIPTORS: *Photosynthesis, *Plants, *Paleoecology, Genetics, Chlorophylls.

Contents:
Cosmic role of the green plant; the emergence of Photosynthesis; a result of the historical development of the organic world
Conclusions
Bibliography.

Levan, Albert.
A HEREDITARY ANOMALY OF THE PLACENTA IN PETUNIA (Eine Erbliche Anomalie der Samenanlage bei Petunia). [1960] [19]p. (10 figs. omitted) 6 refs.
Order from SLA $1.60 60-14281

Partial trans. of mono. Särtryck ur Botaniska Notiser, Lund U., 1937.

DESCRIPTORS: *Plants, *Embryology, Reproductive system, *Genetics, Congenital anomalies.

The normal development of the placenta in Petunia nyctaginiflora is described. An anomaly of the placenta has been found which produces a vegetative growth and a proliferation of the entire placenta. This anomaly shows monohybrid recessive heredity. (Author)

Luks, Yu. A. and V'yugina, N. G.
PIERCING OF THE SCION TISSUES BY THE STOCK IN A GRAFTED CACTUS (Probodenie Podvoem Tkanei Privoya u Privitoga Kaktusa). 5 Mar 62, 6p. (3 figs. omitted). Trans. A-1328.
Order from OTS or SLA $1.10 62-23569

Trans. of Botanicheskii Zhurnal (USSR) 1961, v. 46, no. 7, p. 1006-1008.

DESCRIPTORS: *Plants, Transplantation, Growth, Reproduction.

Miroshnichenko, E. Ya.
BIOLOGICAL CHARACTERISTICS OF WEEDS OF VEGETABLE CROPS IN THE CRIMEA (Biologicheskie Osobennosti Sornykh Rastenii Ovoshchnykh Kul'tur v Krymu) tr. by M. Slade. [1962] [16]p. (foreign text included) 11 refs. [CSIRO] Trans-5452.
Order from OTS or SLA $1.60 62-23713

Trans. of Botanicheskii Zhurnal (USSR) 1961, v. 46, no. 1, p. 115-119.

DESCRIPTORS: *Plants, *Morphology, Growth, *Vegetables.

Weeds of the genus Amaranthus (A. retroflexus, A blitoides, and A. albus), possessing a high plasticity, develop in the fields in the Crimea spring, summer, and autumn forms, which differ in their biomorphological characteristics (seasonal polymorphism). The properties of the summer and autumn forms are analogous to the manifestations of level neoteinia with its characteristic criterion, viz accelerated development in combination with early cessation of growth and absence of the upper nodes (or levels). The development of seasonal Amaranthus forms is determined by environmental conditions which are less than optimum (low humidity of soil and air, high or low temperature and non-uniform temperature fluctuation amplitudes through the day and night, excessive insolation, etc.); variations in the day length play an important part among these factors. The accelerated development of the summer and autumn forms ensures survival of the species under conditions of regular cultivation of the fields; the weeds succeed in seeding in-between cultivations. To prevent the seeding of summer and autumn forms of weeds, cultivation of the soil must continue in late summer and autumn, as new batches of weeds germinate. (Author)

Neishtadt, M. I.
THE HISTORY OF PALYNOLOGY OF THE U.S.S.R. [1962] [87]p. (19 figs. omitted) 8 refs.
Order from OTS or SLA $8.60 62-23841

Trans. of mono. [Palinologiya v SSSR; 1952-57 Gody, Moscow, 1960] p. 1-46.

DESCRIPTORS: History, *Pollen, Spores, Plants.

Shul'gin, I. A., Khazanov, V. S., and Rzhanova, T. B.
ON SOME ASPECTS OF THE STUDIES OF LIGHT PHYSIOLOGY AND PHOTOCULTURE OF PLANTS (O Nekotorykh Aspektakh Issledovanii Svetofiziologii i Svetokul'tury Rastenii). 25 Apr 62 [16]p. 34 refs. Trans. A-1344.
Order from OTS or SLA $1.60 62-24755

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1962, v. 7, no. 1, p. 34-40.

DESCRIPTORS: *Plants, *Physiology, Light, Spectrographic data, Infrared radiation, *Polarization, Adsorption, Reflection.

Light falling at measured angles on the leaves of various mesophytic and xerophytic plants was reflected through the polaroid analyzer of a photometer. Measurements were made in the physiological and near infrared spectral ranges. The degree that the reflected light is polarized by a leaf varies with the leaf surface; it being greatest in smooth, shiny leaves and negligible in strongly wrinkled or hairy leaves. Polarization increases with increasing angles of observation and incidence, with optima at angles of 60° to 70°. In all cases, the degree of polarization is higher in the red than in the green light range. It was also found, with the aid of an integrating sphero, that the optic properties and adsorption ability of leaves remain almost constant when subjected to differently polarized light and to polarized light at different angles of incidence.

Svab, F.
COMPARATIVE MORPHOLOGICAL STUDIES OF CZECHOSLOVAK TOBACCO TYPES BY THE METHOD OF DYNAMIC TOBACCOMETRY (Vyzkum Morfologie Ceskoslovenskych Odrud Tabaku Metodou Dunamicke Tabakometrie). [1962] [40]p.
Order from SLA $3.60 62-14712

Trans. of mono. Sbornik Prac o Tabaku, n. p., 1955, p. 116-162.

DESCRIPTORS: Morphology, *Tobacco, Czechoslovakia Growth, Plants, Standards.

Medical Specialties and Equipment

COLLECTION OF THESES ON ACHIEVEMENTS IN MEDICAL SCIENCES IN COMMEMORATION OF THE TENTH NATIONAL FOUNDATION DAY OF CHINA: SELECTED PORTIONS. 13 July 62 [399]p. 364 refs. JPRS: 14460.
Order from OTS or SLA $21.00 62-32005

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi [Hsia Chuan] v. 2, Peiping, Dec 59, p. 555-585, 587-643, 775-813.

DESCRIPTORS: *Theses, *Ophthalmology, China, Trachoma, Cornea, Transplantation, Eye, Diseases, Glaucoma, Retina, *Otorhinolarynology, Surgery, Ear, Tumors, Deafness, Noise, Bone, Lungs, Medical equipment, Anesthesia, *Therapy, Public health, Utraviolet radiation, Ultrasonic radiation, Pneumonia, Infants, Asthma, Neuralgia, Minerals, Water, Blood, Circulatory system.

Contents:
The success of ophthalmology in New China, by Tso K'o-ming
The success of trachoma prevention, by Hsia Te-chao
The success of corneal transplantation in China, by Hsia Te-chao
The success of observation, treatment and research of cataracts after the liberation, by Liu Chia-ch'i
Primary glaucoma, by Chang Wen-shan
The success of the primary retinal detachment operation, by Chao Tung-shen
Development and achievements in otorhinolaryngology in New China
"Open window technique" of interna auris, by Sun Hung-ch'uan
The conditions of otorhinolarynological tumor and development of tumor treatment in our country in recent years
Investigation on deafness caused by industrial noise and research on protection of the individual
The development of stirrup bone operation, by Wei Neng-jun
The development of the clinical use of the bronchoscope, by Li Chi-hsiao
A study of benadryl hydrochloride as superficial anesthesia scopes of cavity, by Pu Kuo-hsuen and others
China's accomplishments in physical therapy and convalescence since the liberation, by Tsou Hsien-hua
Some observations of the treatment with ultraviolet rays and ultrasonic waves of pneumonia in infants, by Yang Tzu-pien and others
Preliminary conclusions on the curative effects of ultraviolet "Hsueh-Tao" treatment of bronchial asthma, by Huang Hua and Ting Chien-hou
Some observations on the treatment of sciatica patients with ultra-sonic waves, by Tsou Hsien-hua and others
T'ang-Kang-Tzu mineral water and mud: their influence on blood and the circulatory system, by Chang Yung.

MEDICAL INSTRUMENTS IN THE USSR. 7 Feb 62 [14]p. JPRS: 12367.
Order from OTS or SLA $1.60 62-15951

Trans. of Meditsinskaya Promyshlennost' SSSR, 1961, v. 15, no. 10, p. 56-61.

DESCRIPTORS: *Medical equipment, *Thermometers, *Ultrasonic equipment, *Diagnosis, Electrical equipequipment.

Contents:
New electric thermometer, by D. A. Gindin
Ultrasonic diagnostic apparatus UZD-4, by V. A. Klyukachev.

PROBLEMS OF TREATMENT AT HEALTH RESORTS, PHYSICAL THERAPY, AND MEDICINAL GYMNASTICS, 1962, VOL. 27, NO. 1: [SELECTED] TRANSLATIONS. 18 June 62 [62]p. 42 refs. JPRS: 14271.
Order from OTS or SLA $6.60 62-25479

Trans. of Voprosy Kurortologii, Fizioterapii i Lechebnoi Fizicheskoi Kul'tury (USSR) 1962, v. 27, no. 1, p. 3-11, 16-26, 55-61, 64, 68-69, 74-79, 81, 90-93.

DESCRIPTORS: *Health resorts, *Physical fitness, Therapy, Geophysics, Atmospheric electricity, *Ionization, Radiation effects, *Electroshock, Electrophoresis, *Heat therapy, *Controlled atmospheres, *Ballistocardiography, Direct current, *Ultraviolet radiation, Polycythemia *Fatigue (Physiology), Climatic factors.
Contents:
Physico-chemical and geophysical conception of atmospheric ionization, by E. A. Chernyavskii
Aeroiontophoresis, by S. N. Finogenov
Experience in the use of an aerophotarium in a medical institution, by S. A. Yagunov and L. N. Startseva
Ballistocardiography as a method of checking the appropriateness of therapeutic treatments, by I. E. Oranskii
On the removal of ions from the organism by direct current (a critical review) by B. M. Broderzon
Brief communications and remarks from the practice investigations of ultraviolet erythema in the development of fatigue, by N. V. Skryabin
The polar night and irradiation with ultraviolet rays, by B. A. Korolev

On the theoretic principles of health-resort-ology: criticism and bibliography, by S. I. Serov of mono. "Osnovy Kurortologii", v. 2, Moscow, 1959, pt. 1.
Review by A. P. Kirichinskii of the monograph "Lechebnaya Gimnastika pri Paralichakh i Parezakh Organicheskogo Proiskhozhdeniya", by M. M. Anikin and others, Moscow, 1961, 118p.
Conference on Questions of Integrated Climatology, 16-19 Dec 60, by E. M. Baibankova
Scientific-Practical Conference of Physicians of Some Sanatoria of the Caucasus and the Crimea, Sochi, Feb 61, by N. P. Glotov.

STUDIES IN CLINICAL MEDICINE. 27 Feb 62 [32]p. 5 refs. JPRS: 12713.
Order from OTS or SLA $3.60 62-19809

Trans. of Klinicheskaya Meditsina (USSR) 1956 [v. 34] no. 6, p. 12-24 and 57-65.

DESCRIPTORS: *Ballistocardiography, Diagnosis, Medical equipment, *Plethysmography, Blood volume, *Anesthesia, Blood pressure, *Traumatic shock, Surgery, Medicine.

Contents:
Ballistocardiography and its importance in the clinic, by V. V. Parin
The study of vascular tone by digital plethysmography during peridural anesthesia, operations and traumatic shock, by L. D. Karpilovskii.

Grozdanic, Vladislava.
TRANSFUSION APPARATUS AND ITS USE. 25 Jan 62 [6]p. JPRS: 12160.
Order from OTS or SLA $1.10 62-19560

Partial trans. (some parts summarized) of Medicinski Glasnik (Yugoslavia) 1961 [v. 15] no. 6, p. 260-263.

DESCRIPTORS: *Blood transfusions, *Medical equipment, Plastics.

Fridland, L.
THE ACHIEVEMENT OF SOVIET MEDICINE, tr. by V. Shneerson, W. H. Gantt and R. Hodes. 1961, 1v.
Order from Vision Press Ltd., London, Eng. 35s.

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Medicine, Scientific research.

Khurgin, Ya.
MEDICINE AND MATHEMATICS (Meditsina i Matematika). 9 Mar 62 [7]p. JPRS: 12880
Order from OTS or SLA $1.10 62-23431

Trans. from Meditsinskii Rabotnik (USSR) 1962 [v. 25] 23 Jan, p. 3.
Portions of this report will not reproduce will.

DESCRIPTORS: *Medical research, Mathematical analysis, Probability, Medical personnel, Training, *Mathematics.

Mathematics more than any other science provides material for learning by plausible reasoning. Hence, mathematics is essential to doctors mainly as a means of acquiring a mastery of accurate, plausible reasoning. (Author)

Minkh, A. A.
ON THE QUESTION OF THE HYGIENIC SIGNIFICANCE OF AEROIONIZATION. 15 Mar 62 [8]p. JPRS: 13004.
Order from OTS or SLA $1.10 62-23434

Trans. of Zdravookhranenie Belorussii (USSR) 1961 [v. 7] no. 11, p. 31-35.

DESCRIPTORS: *Public health, *Air, *Ionization, *Therapy.

A survey.

Verkhalo, Yu. N.
PHONOTREMOMETER (FT-2V). 21 May 62 [7]p. JPRS: 13883.
Order from OTS or SLA $1.10 62-25001

Trans. of Teoriya i Praktika Fizicheskoi Kul'tury (USSR) 1961, v. 24, no. 8, p. 627-630.

DESCRIPTORS: Exercise, *Shivering, Motor reactions, Therapy, Medical equipment, Measurement.

Microbiology

AEROSOL STUDIES. 31 May 62 [23]p. 16 refs. JPRS: 13942.
Order from OTS or SLA $2.60 62-24997

Trans. of #Voprosy Virusologii (USSR) 1961, v. 6, no. 4, p. 454-469.

DESCRIPTORS: *Aerosols, Virus diseases, Respiratory diseases, Infections, Virus pneumonia, Sprays, Coagulation, Laboratory equipment, Operation.

Contents:
Theoretical basis of operation of the aerosol IVK-1 chamber for the study of experimental respiratory infections. I. Operational dynamics of the aerosol chamber, by V. M. Bolotovskii
Theoretical basis of operation of the aerosol IVK-1 chamber for the study of experimental respiratory infections. II. Evaluation of the aerosol by certain physical parameters, by V. M. Bolotovskii
The characteristics of aerosol infection in ornithosis, by I. I. Terskikh and others.

Deppe, K. and Seehofer, F.
THE ADHESION MECHANISM OF CONIDIOSPORES OF PERONOSPORA TABACINA ADAM. [1962] 4p.
Order from K-H $5.00 K-H 11816a

Trans. of Beiträge zur Tabakforschung [sic] 1962, no. 5, p. 177-180.

DESCRIPTORS: *Mildew, *Spores, Adhesion.

Efraimson, V. P.
CONTROL MECHANISMS OF ANTIBODY FORMATION IN LIGHT OF DATA OF IMMUNITY GENETICS AND BIOCHEMISTRY OF ABNORMAL HUMAN HEMOGLOBINS. 21 Feb 62 [29]p. 33 refs. JPRS: 12611.
Order from OTS or SLA $2.60 62-19752

Trans. of #Problemy Kibernetiki (USSR) 1961, no. 6, p. 161-181.

DESCRIPTORS: *Antibodies, Genetics, *Immunology, Pathology, *Hemoglobins, Mutations, Proteins, Enzymes, Antigens, Amino acids.

The evolutionary adaptation of microbial protein-enzymes to splitting of particular proteins of the macroorganism leads to an ever greater increase in the specificity of the reaction occurring between the microbial protein and the protein of the macroorganism. The process of mutational replacement of the protein acted on and split by the parasite's enzyme by a protein which blocks this enzyme can and, obviously, must be accomplished in relation to the very diverse enzymes of the very diverse pathogenic microorganisms. As a result of this process organisms living now must be able to elaborate a very large number of proteins capable of reacting selectively with microbial protein-enzymes. In view of this the main defensive reactions of antibodies with microorganisms and their toxins are manifested in highly specific reactions between the protein of the macroorganism and the microbial protein or toxin, in precipitation and agglutination reactions, neutralizing the microbe or its toxins. The mutational transformation of the protein of the macroorganism from a substrate into a blocking factor can be explained by the very large scale and generality of intra- and interspecific divergence in the very diverse protein-antigens. The selective multiplication of mutant cells after encounter with a corresponding antigen is responsible for the increase in the production of antibodies after an antigenic stimulus. (Author)

Fazlullin, N. S.
MICROFLORA OF MOUNTAIN AIR (Mikroflora Povitrya Gir'skikh Visot) tr. by H. H. 29 June 62, 6p. I-1218.
Order from OTS $0.50 62-11722

Trans. of Eksperymental'na Medytsyna (USSR) 1937, no. 2, p. 69-74.

DESCRIPTORS: *Microorganisms, *Bacteria, *Molds, Air, Mountains.

Mitov, G. and Ninov, N.
HUMAN KIDNEY TISSUE CULTURES FOR VIROLOGIC RESEARCH. 26 Feb 62 [8]p. JPRS: 12677.
Order from OTS or SLA $1.10 62-19774

Trans. of Khigiena [Epidemiologiya i Mikrobiologiya] (Bulgaria) 1961 [v. 4] no. 4, p. 47-51.

DESCRIPTORS: *Tissues (Biology), *Culture media, Kidneys, Virus vaccines, *Viruses, Storage.

Monolayer tissue cultures of human kidney cells have been studied in the VMI and introduced into the work of the virologic laboratory. The tissue cultures of human kidney cells are more sensitive than clonal cultures to the polioviruses, to the attenuated strains of the Sabin type, to the ECHO and Coxsackie viruses and to the vaccinia virus; they are thus well suited for mass screening diagnostic work - for the isolation, typing and titration of viruses through the cytopathorganic effect of the latter and the color reaction. Tissue cultures of human kidney cells do not require special nutrient media and may be stored successfully at 4 degrees Centigrade for 20 to 25 days. (Author)

Rubenchik, L. I., Kordyum, V. A. and others.
GROWING BACTERIALLY PURE CULTURE OF CHLORELLA IN A MULTISTAGE FLOWING SYSTEM (Viroshchuvannya Bakterial'no Chistoi Kul'turi Chlorella v Bagatostupinchastii Protochnii Sistemi). 15 Mar 62, 8p. 5 refs. Trans. A-1333.
Order from OTS or SLA $1.10 62-23567

Trans. of Mikrobiologichnyi Zhurnal (USSR) 1961, v. 23, no. 5, p. 5-8.

DESCRIPTORS: Growth, *Algae, *Culture media, Nutrition, Biochemistry, Laboratory equipment, Purification.

Tomov, A. and Benvenisti, I.
STAINING DYSENTERIC BACTERIA WITH THE AID OF ANTIBODIES MARKED WITH 1-DIMETHYL-AMINO-NAPHYTYL-5-SULFOCHLORIDE. 26 Dec 61 [8]p. 10 refs. JPRS: 11714.
Order from OTS or SLA $1.10 62-19618

Trans. of Voenno Meditsinsko Delo (Bulgaria) 1960 [v. 15] no. 6, p. 35-40.

DESCRIPTORS: *Shigella, Bacteria, *Biological stains, *Flourescence, Antigens, Sensitivity, Antibodies, Chlorides.

Fluorescent antibodies labelled with 1-dimethyl-aminonaphytyl-5-sulfochloride which stain dysenteric bacteria specifically were obtained. The "stereo" effect which was observed when the Wood filter of the fluorescence microscope was shifted slightly makes it possible to distinguish in the same field of vision the fluorescent from the non-fluorescent bacterial bodies and to determine whether there are any artifacts. There is a correspondence between the intensity of the fluorescence of some genuses and the agglutinin titer of the serum with these genuses, but not in all cases. (Author)

Verona, Onorato and Picci, Giovanni.
MICROBIOLOGY: THE INHIBITING ACTION OF ACTIDIONE ON THE YEASTS OF WINE FERMENTATION. [1962] 12p.
Order from SLA $1.60 62-16018

Trans. of [Accademia Nazionale dei] Lincei. [Classe di] Sc[ienze] Fiz[iche] Mat[ematiche] e Nat[urali]. Rend[iconti] (Italy) 1953 [ser. 8] v. 14 [no. 5] p. 680-687.

DESCRIPTORS: Microbiology, *Yeasts, Inhibition, *Fermentation, *Wines, Antibiotics.

Woznicka, Wanda, Niemczyk, Hanna, and Paszkiewicz, Alina.
RESEARCH ON ACTINOMYCINS C: ONCOSTATIN C: BIOLOGICAL PART (Onkostatyna C: I. Czesc Biologiczna). 24 Juiy 61 [27]p. JPRS: 9686.
Order from OTS or SLA $2.60 62-19542

Trans. of Medycyna Doswiadczalna i Mikrobiologia (Poland) 1961, v. 13, no. 1, p. 47-52.

DESCRIPTORS: *Streptomyces, *Fungi, *Antibiotics, Chromatographic analysis, Ultraviolet sprectroscopy.

A description is given of Streptomyces sp INA 39/58 which produces oncostatin C. This strain is a variant of Streptomyces chrystomallus. The course of fermentation in flasks was described, and the antibiotic spectrum of oncostatin C was determined. The strain Streptomyces sp INA 39/58, in fermentation broth, produces oncostatin C, an antibiotic identified as belonging to the actinomycin C group. For identification was employed the method of tissue-paper chromatography in three different systems of solvents. Assays were made of the potency of the antibiotic, and the ultraviolet absorption curve was determined. The melting point and specific rotation were determined. The average yield in laboratory scale flasks was 155.5 mg of the antibiotic with a potency of 1000 mcg/ml from one liter of liquor; in the fermentation tanks, the average yield from one liter of liquor was from 43.8 to 76 mg of the substance. The LD_{50} of oncostatin C is 1.17 mg/kg.

Neurology and Psychiatry

JOURNAL OF NEUROPATHOLOGY AND PSYCHIATRY, 1961, VOL. 61, NO. 11: EXCERPTS. 12Feb62 [23]p. 8 refs. JPRS: 12432.
Order from OTS or SLA $2.60 62-15931

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1951, v. 61, no. 11, p. 1735-1746.

DESCRIPTORS: *Neurology, Pathology, *Psychiatry, *Education, *Nervous system, Physiology, Anatomy, *Emotions, Science, Sensory perception, Mental diseases, *Children.

Contents:
Changes in the psychiatric teaching plan, by E. Yu. Karu
Results of the Scientific Conference on the Problem "Structure and Function of the Nervous System", 10-14 Dec 60, by T. S. Naumova and I. A. Stankevich
Gnostic and haptic emotions, by A. N. Shogam: review of mono O Prirode Individual'nogo Soznaniya; v Norme i Patologii, by A. A. Megrabyan, Erevan, 1959, 245p.
Clinical lectures on the psychiatry of childhood, v. 2, by G. E. Sukhareva: review by S. Mnukhin and D. Ozeretskovskii of mono. pub. Moscow, 1959.

Aleksanyan, A. M. and Arutyunyan, R. S.
THE EFFECT ON THE SYMPATHETIC NERVE ON THE ELECTRIC ACTIVITY OF THE ENCEPHALON [Vliyanie Simpaticheskogo Nerva na Elektricheskuyu Aktivnost' Golovnogo Mozga]. [1962] 3p. 16 refs.
Order from OTS or SLA $1.10 62-14688

Trans. of [Akademiya Nauk SSSR. Doklady] 1959, v. 125 [no. 1] p. 236-[239].

DESCRIPTORS: *Brain, *Autonomic nervous system, Nerves, Electrical properties, Stimulation, Inhibition, *Epinephrine

Electroencephalograms of the reticular formation in the rabbit mid-brain, thalamus and cerebral cortex indicate that stimulation of jugular sympathetic nerve induces a diffused activation of these areas. Injection of adrenalin into the femural vein produces similar results. Removal of the upper jugular ganglia causes the opposite effect (i.e., a diffused inhibition of electrical activity). It is proposed that the sympathetic nervous system has the same adaptation-trophic effect upon the recticular formation as it does on the skeletal muscle and other tissues and systems.

Cazzamalli, Ferdinando.
ELECTROMAGNETIC PHENOMENA OF THE HUMAN BRAIN UNDER INTENSE PSYCHOSENSORIAL ACTIVITY AS DETECTED BY A TRIODE OSCILLATOR FOR ULTRA-SHORT WAVES. 13 Apr 62 [14]p. JPRS: 1344
Order from OTS or SLA $1.60 62-24012

Trans. of mono. Atti del Terzo Congresso dei Nuclei Italiani di Radiobiologia (Congress of Italian Centers of Radiobiology (no. 3)) v. 5, Bologna, Apr 38, p. 194-198.

DESCRIPTORS: *Sensory perception, Emotions, *Brain, Electromagnetic waves, *Electroencephalography, Triodes, Oscillators, Ultra high frequency.

Hesnard, A.
MORBID DISINTEGRATION OF THE BEHAVIOR [SELECTED PARTS]. [1962] [50]p.
Order from SLA $4.60 62-14872

Trans. of mono. L'Univers Morbide de la Faute, Paris, 1949, pt. 1, p. 216-244 and pt. 2, p. 341-372, 401-422.

DESCRIPTORS: *Mental diseases, *Behavior, Pathology, Personality, Stress (Psychology), Psychoses, *Nervous system, Reaction (Psychology), Attitudes, Attention, Reasoning.

Contents:
Dissolution of ethical significances and schizophrenic dissolution of behavior
Biological conditioning of the disintegration of the behavior
Nervous substratum of the disintegration of the behavior
Attempt at a structural-ethical theory of mental disease.

Sarkisov, S. A.
IMPORTANT METHODS USED IN STUDYING THE STRUCTURAL AND FUNCTIONAL MECHANISMS OF THE BRAIN UNDER NORMAL AND PATHOLOGICAL CONDITIONS. [1962] 6p. 9 refs.
Order from OTS or SLA $1.10 62-14751

Condensed trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1961, v. 61, no. 2, p. 161-164.

DESCRIPTORS: *Brain, *Pathology, Drugs, Histology, Biochemistry.

A survey of research findings shows that ordinary histo-pathological examination of mental diseases without an investigation into the character and degree of change of the inter-neural connections, is completely inadequate. The slightest changes in neural structures or inter-neural connections may lead to mental aberrations, commonly referred to as "functional" in nature. The progress of modern biochemistry has made possible the study of the most minute aspects of brain activity. The work of investigators in this field is not only of great theoretical importance but holds great promise for diagnosis and therapy of mental diseases.

Votava, Zdenek.
ALL-STATE PSYCHOPHARMACOLOGICAL SEMINAR (NO. 3) AT JESENIK, CZECHOSLOVAKIA (III. Celostatni Psychofarmakologicky Seminar v Jeseniku). 15 Sep 61 [10]p. JPRS: 10135.
Order from OTS or SLA $1.10 62-19627

Trans. of Casopis Lekaru Ceskych (Czechoslovakia) 1961 [v. 100] no. 27/28, p. 888-890.

DESCRIPTORS: Conferences, *Drugs, *Psychoses, *Pharmacology.

Pathology

BIOGRAPHIC DATA ON FRANTISEK KARASEK, MD, DR. OF SCIENCES. 12 June 62 [5]p. JPRS: 14090.
Order from OTS or SLA $1.10 62-25189

Trans. of Casopis Lekaru Ceskych (Czechoslovakia) 1962, v. 101, no. 21, p. 642-643.

DESCRIPTORS: *Medical personnel, Medicine, Physiology.

FILTERS FOR THE DETOXIFICATION OF TOBACCO SMOKE. [1962].
Order from K-H $10.00 K-H 11349

Trans. of German patent 1,004,986 [pub. 1957].

DESCRIPTORS: Particulate filters, Cigarettes, *Tobacco, *Smokes, Toxicity.

MEDICAL JOURNAL OF UZBEKISTAN, 1961, NO. 7: EXCERPTS. 15 June 62 [32]p. 32 refs. JPRS: 14117.
Order from OTS or SLA $3.60 62-25163

Trans. of Meditsinskii Zhurnal Uzbekistana (USSR) 1961, no. 7, p. ##3-9, 32-37, 50-56, 73-77.
##Another trans. is available from OTS or SLA $1.60 as 62-19805, JPRS-12733, 28 Feb 62 [12]p.

DESCRIPTORS: *Industrial medicine, *Brucellosis, Oxygen, Thiouracils, *Radiation sickness, *Bioelectronics, Cerebral cortex, Medical research, Drugs

Contents:
##Current problems in industrial pathology and the control of certain occupational diseases in Uzbekistan, by K. S. Zairov and L. B. Shraiber
The clinical picture of septic-metastatic (subacute) forms of brucellosis, by V. M. Madzhidov
The effect of oxygen and thiouracil on the development of radiation sickness in animals, by T. G. Mankus and others
Changes in the electrical activity of the cortex and of the reticular formation upon stimulation of enteroceptors, by A. I. Karaev and N. A. Mushkina
The reply to docent of the Irkutsk Agriculture Institute, candidate of biological sciences, by K. A. Kozlov

NATURAL FOCALIZATION AND THE EPIDEMIOLOGY OF THE PARTICULARLY DANGEROUS INFECTIOUS DISEASES: SELECTED CHAPTERS. 1 May 62 [215]p. 131 refs. JPRS: 13629.
Order from OTS or SLA $14.50 62-24408

Trans. of mono. Prirodnaya Ochagovost' i Epidemiologiya Osobo Opasnykh Infektsionnykh Zabolevanii, Saratov, 1959, p. 5-17, 40-96, 108-116, 181-187, 337-371, 437-451, 502-513, 545-563.

DESCRIPTORS: *Epidemiology, Infections, *Plague, Countermeasures, *Disease carriers, Control, Aral Sea, *China, *Ticks, Drugs, *Virus vaccines, Immunization, *Pneumonic plague vaccine, *Tularemia, *Brucellosis, Czechoslovakia, Poland.

Contents:
Epizootic status of natural foci of plague in the USSR in

1954-56 and an analysis of the measures taken, by V. N. Pastukhov
The problem of the paleogenesis and history of the natural plague focus in the Northwest Caspian region, by N. P. Mironov
Rules and regulations of a plague enzootic in a focus in the Northwest Caspian region, by N. P. Mironov and others
Existential conditions and most important epizootological characteristics of the Aral area of the Central Asiatic Plain, natural focus of plague, by N. P. Naumov and others
Study of the epizootology and mechanisms of focalization of plague in the Kara-Kalpakskaya region of Kyzyl-kumy, by N. Ya. Sharapkova and others
Some results and prospects of study of the natural focalization of plague on the territory of the Chinese People's Republic, by Ch'eng Weng-kuei and others
Progress in the control of plague in the Chinese People's Republic, by Yang Ch'ing-hsiu
Current status of the problem of the role of ticks of the superfamily Ixodoiea in the natural focalization and epizootology of plague, by O. V. Afanaseva and M. A. Mikulin
Characteristics of the pathogenesis of primary pneumonic plague and their epidemiological significance, by V. N. Lobanov and others
The problem of treating cases of plague in people by modern drugs, by Ch'eng Weng-kuei and others
Methods of early bacteriological diagnosis of plague, by M. P. Pokrovzkaya
Side-effects produced by living "1, 17" plague vaccine, by A. S. Zyuzin
Side effects produced by "1. 17" plague vaccine depending on its cellular composition after intradermal and percutaneous injections, by M. F. Shmuter and others
The problem of optimum dosage of dry living "1, 17" plague vaccine, by N. R. Ivanov and V. K. Klochkova
The current status of the study of the epizootology of tularemia in the USSR, by T. N. Dunaeva
Percutaneous vaccination against brucellosis, by G. A. Balandin and others
Study of the natural focalization of human diseases in its application to the regional characteristics of Kazakhstan, by I. G. Galuzo and M. M. Rumentsova
Investigations of natural foci of diseases in Czechoslovakia, by B. Rosicki
Investigations of the natural reservoirs of authropozooneses in Poland, by Y. Parnas

RECENT SOVIET ARTICLES ON LABOR HYGIENE. 22 Mar 62 [15]p. 22 refs. JPRS: 13157.
Order from OTS or SLA $1.60 62-23626

Trans. of Gigiena Trudy i Professional'nye Zabolevaniya (USSR) 1962, v. 6, no. 1, p. 21-24 and 28-33.

DESCRIPTORS: *Public health, Labor, Climatic factors, *Drugs, *Dibasol. *Electromagnetic waves, Electroencephalography, Electrocardiography, Brain, Blood vessels.

Contents:
On the possible means for facilitating the adaptation of the human body to unusual climatic conditions, by N. V. Lazarev and L. P. Vartanyan
Certain clinical manifestations from chronic exposure to centimeter waves, by E. A. Drogichina and others

RESEARCH ON PREVENTION AND TREATMENT OF TYPHUS FEVER, TROMBICULIASIS AND Q FEVER. 11 July 62 [21]p. 36 refs. JPRS: 14433.
Order from OTS or SLA $2.60 62-25714

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 81-88.

DESCRIPTORS: Countermeasures, Therapy, *Rickettsia, *Infections, Mites, *Q fever, *Typhus fever. Parasitology, China

SOVIET PUBLIC HEALTH, 1962, VOL. 21, NO. 3: [SELECTED] ARTICLES. 22 June 62 [25]p. JPRS: 14235.
Order from OTS or SLA $2.60 62-25467

Trans. of Sovetskoe Zdravookhranenie (USSR) 1962, v. 21, no. 3, p. 34-39 and 43-51.

DESCRIPTORS: *Public health, Diseases, Population, *Vital statistics, Sociology, Siberia

Contents:
Some results of a thorough study of the morbidity of the adult population of Makeevich, by M. G. Garina
The mortality rate in Vorontsovskii rayon during the period, 1950-58, by I. G. Zyazin
Notes on the significance of social conditions in the problem of longevity, by A. N. Sverchkov
Longevity among the population of eastern Siberia, by Ya. M. Grushko

THE TRENCIN CONFERENCE OF DERMATO-VENEREOLIGISTS [NO. 13]. 6 Nov 61 [6]p. JPRS: 10944.
Order from OTS or SLA $1.10 62-19505

Trans. of Lekarsky Obzor (Czechoslovakia) 1961 [v. 10] no. 5, p. 307-308.

DESCRIPTORS: Conferences, *Diseases, *Skin, *Venereal diseases, Czechoslovakia.

Aslanyan, G. A.
ON CARBOHYDRATE METABOLISM IN ENDARTERITIS OBLITERANS (Ob Uglevodnom Obmene pri Obliteriryushchem Endarteriite).
9 Dec 60 [11]p. 11 refs. JPRS: 7278.
Order from OTS or SLA $1.60 62-23484

Trans. of Novyi Khirurgicheskii Arkhiv (USSR) 1960, v. 39, no. 4, p. 81-85.

DESCRIPTORS: *Carbohydrates, *Metabolism, Diseases, Blood vessels, Blood sugar, Capillaries, *Arteriolonecrosis.

For an accurate interpretation of the carbohydrate metabolism of patients with endarteritis obliterans it is necessary to determine the sugar concentration in capillary, venous and arterial blood drawn from the patient's magistral vessels. The sugar concentration

in blood drawn from capillaries, veins and arteries fluctuates within normal limits. The type and stage of disease can be correlated to one stage or another of the disturbance of the arteriovenous equilibrium. In chronic spastic and angiosclerotic forms, the arteriovenous equilibrium of sugar concentration is maintained. In acute cases of these processes as well as in patients with thromboangitic forms and with necrotic stages, the arteriovenous equilibrium is disrupted and the sugar concentration in the venous blood of the affected limb is higher than than in the arterial blood. A difference in arteriovenous sugar concentrations is demonstrable in severe disease and may be of prognostic importance. (Author)

Buchvarov, B., Antonov, A., and Mulchkova, L.
TOBACCO TAR IN DERMATOTHERAPEUTIC PRACTICE. [1962] 23p.
Order from K-H $28.75 K-H 3381-b

Trans. of Suvremenna Meditsina (Bulgaria) 1954, v. 5, no. 3, p. 60-68.

DESCRIPTORS: *Tobacco, Therapy, *Diseases, *Skin.

Burgel, E. and Themel, K. G.
PATHOLOGY AND CLINICAL SYMPTOMS OF LUNG-SCAR CARCINOMA. [1962] 43p.
Order from K-H $53.75 K-H 10332-a

Trans. of Oncologia (Switzerland) 1958, v. 11, no. 3/4, p. 254-287.

DESCRIPTORS: *Cancer, *Lungs, Pathology.

Castellino, N.
MODIFICATIONS OF CARBOXYHEMIZ AFTER INHALING TOBACCO SMOKE. [1962] 9p.
Order from K-H $11.25 K-H 4036-a

Trans. of Folia Med[ica] (Italy) 1955. v. 38, p. 1014-1024.

DESCRIPTORS: *Respiration, *Hemaglobin, Carbon dioxide, Oxygen, *Tobacco, *Smokes, *Cigarettes.

Charnyi, A. M.
CLINICAL PHYSIOLOGICAL NATURE OF HYPOXIC CONDITIONS AND HYPOXIC TYPE OF OXYGEN DEFICIENCY. 14 Feb 62 [33]p. JPRS: 12521.
Order from OTS or SLA $3.60 62-19800

Trans. of mono. Patofiziologiya Gipoksicheskikh Sostoyanyi (Pathophysiology of Hypoxic Conditions) Moscow, 1961, chap. 1, p. 98-143.

DESCRIPTORS: *Anoxia, Physiology, Oxygen, Body, *Pathology.

Chojnowski, J. R. and Dorabialska, A.
A PROBLEM OF CANCEROGENITY OF TOBACCO SMOKE ON THE BASIS OF RADIOACTIVITY TESTS. [1962] 12p.
Order from K-H $13.00 K-H 6999-a

Trans. of [Polski Tygodnik Lekarski] 1957 [v. 12, no. 31, p. 1181-1184].

DESCRIPTORS: *Cancer, *Tobacco, *Smokes, Radioactivity, Tests.

Cuzin, J. L.
THE PYROGENATION STATUS IN THE CIGARETTE. Dec 60, 16p.
Order from K-H $20.00 K-H-10481 b

Trans. of mono. issued by S. E. I. T. A. French Tobacco Monopoly, n. d.

DESCRIPTORS: *Cigarettes, *Pyrogens

Danysz, Andrew and Dmochowski, John.
THE EFFECT OF TOBACCO SMOKE INTOXICATION ON PHYSICAL EFFICIENCY. [1962] 8p.
Order from K-H $10.00 K-H 9002

Trans. of Polish language article from an unidentified source, n. d.

DESCRIPTORS: *Tobacco, *Smokes, Cigarettes, Physical fitness, *Toxicity.

Danysz, Andrew and Dmochowski, John.
STUDIES ON THE EFFECT OF TOBACCO SMOKE COMPONENTS ON STRIATED MUSCLE FUNCTION. [1962] 20p.
Order from K-H $25.00 K-H 9458

Trans. of Pat[ologia] Polska, 1959, v. 10, no. 1, p. 1-11

DESCRIPTORS: *Tobacco, *Smokes, *Muscles, Physiology.

Eichler, O.
PHOSPHINE POISONING, CHRONIC, INDUSTRIAL. [1961] 5p. 9 refs. MDF E-103.
Order from OTS $0.50 62-11549

Trans. of [Archiv für Toxicologie] (Germany) 1934, v. 5, p. 23-26.

DESCRIPTORS: *Phosphines, *Poisoning, Diseases, Acetylenes, Calcium compounds, *Carbides, *Peptic ulcers, Toxicity, Industrial medicine.

Fang, Ch'i.
RESEARCH ON BLOOD DYNAMICS IN RHEUMATOID-BICUSPID VALVES STRICTURES. 17 July 62 [34]p. 4 refs. JPRS: 14497.
Order from OTS or SLA $3.60 62-25984

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 123-131.

DESCRIPTORS: *Blood pressure, *Heart, *Veins, *Arteries, Pathology, Valves, *Rheumatic fever, Surgery, Electrocardiography, Diagnosis.

Feng, Lan-chou, Mao, Shou-pai, and Feng, Lan-hsiang.
RESEARCH ON HUMAN TAPEWORM INFECTIONS. 10 July 62 [17]p. 31 refs. JPRS: 14425.
Order from OTS or SLA $1.60 62-25720

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 76-81.

DESCRIPTORS: *Tapeworms, Man, *Parasitic infections. *Epidemiology, Cattle, Hogs, *Echinococcosis, Countermeasures, Therapy, Surgery, China.

Feng, Lan-chou and Feng, Lan-hsiang.
RESEARCH ON THE PREVENTION AND TREATMENT OF FILARIASIS. 3 July 62 [19]p. JPRS: 14357.
Order from OTS or SLA $1.60 62-25620

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsueh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 40-47.

DESCRIPTORS: *Parasitic infections, *Filariasis, Therapy, Countermeasures, *Disease carriers, Mosquitoes, *Drugs, Fetal membranes, Tissues (Biology), Surgery.

Furbringer.
INJURIES CAUSED BY SMOKING TOBACCO. [1962] 19p.
Order from K-H $23.75 K-H 3367-f

Trans. of Zeit[schrift] für Ärztliche Fortbildung (Germany) 1923, v. 20, p. 697-703.

DESCRIPTORS: *Tobacco, *Smokes, *Injuries, *Cigarettes.

Gannyshkina, I. V.
THE PECULIARITIES OF MORPHOLOGICAL CHANGES IN VESSELS ASSOCIATED WITH SLOWING AND ARREST OF BLOOD FLOW AND THE POSSIBILITY OF REVERSING THEM (Ob Osobennostyakh Morfologicheskikh Izemenenii Sosudov pri Zamedlenii i Ostanovke Krovotoka i Vozmozhnosti ikh Obratnovo Razvitiya). 12 Feb 62 [14]p. 23 refs. JPRS: 12396.
Order from OTS or SLA $1.60 62-15949

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1961, v. 61, no. 3, p. 387-395.

DESCRIPTORS: *Blood vessels, *Pathology, Morphology, Blood volume, *Blood circulation, Constriction, *Thrombosis, Brain.

Gefter, A. I., Matusova, A. P., and Belousov, S. S.
ON THE PROBLEM OF THE DIAGNOSTIC AND PROGNOSTIC VALUE OF BALLISTOCARDIOGRAPHY IN CORONARY INSUFFICIENCY. 6 Feb 62 [12]p. 19 refs. JPRS: 12345.
Order from OTS or SLA $1.60 62-15937

Trans. of Terapevticheskii Arkhiv (USSR) 1957, v. 29, no. 7, p. 26-32.

DESCRIPTORS: *Diagnosis, *Heart, Diseases, *Ballistocardiography, Blood circulation, Medical equipment.

We present our experience in the use of the ballistocardiograph in various forms of coronary insufficiency. (Author)

Gneuss, W. and Koitzsch, Kl.-D.
AN ORNITHOSIS EPIDEMIC WITH FREQUENT RECURRENCES. 13 Dec 61 [19]p. JPRS: 11528.
Order from OTS or SLA $1.60 62-19727

Trans. of Deutsche Gesundheitswesen (East Germany) 1961, v. 16, no. 21, p. 964-972.

DESCRIPTORS: *Virus pneumonia, *Epidemiology, *Disease carriers, *Birds, *Virus diseases.

An ornithosis epidemic arising from infected ducks, and comprising 70 cases among abattoir-personnel and duck-breeders in the Bautzen area, is reported. The series was noteworthy for high infectivity, severe clinical picture, marked frequency of recurrence, and greatly-prolonged convalescence. Attention is called to the rising importance of ornithosis, and the danger thereby presented to the corresponding vocational groups; all of this demands strict veterinary measures in the interest of preventive medicine.

Gravano, Luis, Bogetti, Hugo, and Iovine, Julio R.
CHRONIC STENOSING CHOLANGITIS AND CHRONIC RELAPSING PANCREATITIS: MANIFESTATION OF A LOCALIZED COLLAGEN DISEASE? (Colangitis Cronica Estenosante y Pancreatitis Cronica Recidivante: Expresion de una Colagenosis Localizada) [1962] 11p. 5 refs.
Order from SLA $1.60 62-14511

Trans. of [la] Prensa Médica Argentina, 1958, v. 45 [no. 16] p. 1613-1617.

DESCRIPTORS: *Gallbladder, *Pancreas, Infections, *Collagen, Diseases.

Case history.

Ho Ch'i, Sheng Po-liang, and Hsuen Ai-tseng.
RESEARCH ON THE PREVENTION AND TREATMENT OF MALARIA. 5 July 62 [18]p. JPRS: 14375.
Order from OTS or SLA $1.60 62-25625

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsueh K'o Hsueh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in the Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 47-53.

DESCRIPTORS: *Malaria, *Parasitic infections, Disease carriers, *Mosquitoes, Control, *Drugs, Atabrine, Triazines, Chloroquine, Guanidines, Chinese traditional medicine, China.

Krzymien, Henryk.
A CONTRIBUTION TO THE PROBLEM OF THE TOBACCO SMOKING INFLUENCE ON THE OCCURRING OF PULMONARY CANCER. Feb 61, 9p.
Order from K-H $11.25 K-H 10148

Trans. of Pol[ski] Tyg[odnik] Lek[arski] 1959, v. 14, no. 47, p. 2064-2067.

DESCRIPTORS: *Lungs, *Cancer, *Tobacco, Smokes, *Cigarettes.

Levi-Valensi, A., Akoun, G., and Fourment, M.
PRIMARY BRONCHIAL CANCER IN ALGERIA: A STATISTICAL STUDY OF 100 HISTOLOGICALLY CONFIRMED CASES. [1962] 28p.
Order from K-H $35.00 K-H 5226-a

Trans. of Semaine des Hôpitaux de Paris (France) 1956, v. 32, p. 1051-1057.

DESCRIPTORS: *Cancer, *Lungs, Histology, Algeria.

Lickint, F.
ETIOLOGY AND PROPHYLAXIS OF LUNG CANCER AS A PROBLEM OF INDUSTRIAL HYGIENE AND OF TOBACCO SMOKE. [1962] 14p.
Order from K-H $17.50 K-H 9382

Trans. of unidentified article, pub. by T. Steinkopff, Dresden/Leipzig, 1953.

DESCRIPTORS: Etiology, *Cancer, *Lungs, Industrial medicine, *Tobacco, Smokes.

Lin, Ch'en[g].
DYNAMICS OF THE BALLISTOCARDIOGRAM AND THE ELECTROCARDIOGRAM IN PATIENTS WITH HYPERTONIC DISEASE. 6 Feb 62 [15]p. 4 refs. JPRS: 12343.
Order from OTS or SLA $1.60 62-15956

Trans. of Klinicheskaya Meditsina (USSR) 1957, v. 35, no. 9, p. 124-131.

DESCRIPTORS: *Ballistocardiography, *Electrocardiography, *Hypertension, Drugs, Reserpine

In a study of the ballistocardiogram of 86 patients deviations from the norm were detected in 68. After treatment with reserpine and other hypotensive remedies a significant improvement of the indicators of the ballistocardiogram was noted in 45 patients, and in 15 a complete normalization of it took place. In 23 patients there was no improvement in the ballistocardiogram, and in several a worsening of the indicators was even observed. A regular correspondence was seen between the frequency and level of the ballistocardiographic changes and the stages of hypertonic disease. There exists a close interrelationship between changes of the ballistocardiogram and the electrocardiogram and the age of the patients in hypertonic disease; the connection between the changes of the ballistocardiogram and age is particularly distinct. The reason for these changes in the early stages and in young patients is latent cardiac insufficiency. In the late stages, however, and in elderly patients, along with cardiac insufficiency a gradually developing coronary atherosclerosis plays a role in the ballistocardiogram changes. In the treatment of hypertonic disease patients with various remedies the following changes in the ballistocardiogram are observed, as a rule; the IJ wave increases the KL wave and the ratios HI/IJ, JK/IJ, and KL/JK decreases; the ratio KL/IJ also decreases. Changes in the ballistocardiogram are encountered more frequently, are pronounced to a greater degree, and furnish more significant dynamics after treatment than changes in the electrocardiogram.

Lin, Chuan-yang.
RHEUMATOID HEART DISEASES. 16 July 62 [30]p. 76 refs. JPRS: 14476.
Order from OTS or SLA $2.60 62-25991

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 117-123.

DESCRIPTORS: *Rheumatic fever, Pathology, *Heart, Diagnosis, *Diseases, Pregnancy, Bibliography.

Mao, Shou-pai.
RESEARCH ON THE PREVENTION AND TREATMENT OF SCHISTOSOMIASIS. 3 July 62 [29]p. JPRS: 14360.
Order from OTS or SLA $2.60 62-25618

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsueh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 26-36.

DESCRIPTORS: *Parasitic infections, Epidemiology, *Schistosomiasis, Disease carriers, Snails, Countermeasures, Animals, Immunology, Therapy, *Drugs, Emetics, Antimony compounds.

Melik-Aslanova, P. S.
TUMORS OF THE EYE ACCORDING TO THE CLINICAL MATERIAL OF THE AZERBAYDZHAN SCIENTIFIC-RESEARCH INSTITUTE OF OPHTHALMOLOGY FROM 1946 THROUGH 1956. 20 June 62 [7]p. JPRS: 14174.
Order from OTS or SLA $1.10 62-25514

Trans. of Azerbaidzhanskii Meditsinskii Zhurnal (USSR) 1962, no. 1, p. 40-43.

DESCRIPTORS: *Tumors, *Eye, Ophthalmology Cancer, Sarcoma, Age.

Tumors of benign and malignant nature constituted 1.34% of all eye diseases, according to the data of the Institute of Ophthalmology over a 10-year period. With respect to the age composition of the patients, it should be noted that the number of malignant neoplasms increases after 40 years of age, whereas the number of benign tumors, beginning with 40 years of age, gradually decreases. The majority of patients with tumors of the eye are patients with tumors of the eyelids, the number of benign tumors of the eyelids being three times greater than that of malignant tumors. Patients with tumors within the eye or in the epibulbar region are encountered more frequently than patients with orbital lesions. Among carcinomatous tumors, the eyelids occupy first place with respect to location, whereas the eyes themselves are most frequently involved in the case of sarcomatous tumors. It should be noticed that the highest percentage of patients with carcinoma are in the age group older than 50 years, whereas those with sarcomatous tumors predominate in the 41 to 50-year age group. A high percentage (0.64) of patients with malignant tumors of the eye, eyelids, and orbit passing through the clinic of the institute over a 10-year period, testifies to the important role of tumors in the pathology of the eye and to the need for a more precise and early diagnosis of diseases and rational control of malignant neoplasms. (Author)

Olsuf'ev, N. G. and Rudnev, G. P., eds.
TULAREMIA, CHAPS. 1, 4, 6, 9-11. 13 June 62 [364]p. 1077 refs. JPRS: 14105.
Order from OTS or SLA $21.00 62-25182

Trans. of mono. Tulyaremia, Moscow, 1960, p. 5-23, 96-135, 207-241, 305-457.

DESCRIPTORS: *Tularemia, Infections, History, Distribution, Epidemiology, *Tularemia vaccine, *Pasteurella, Microbiology, Disease carriers, *Bibliography.

Contents:
History of the study of tularemia in the USSR
Experimental tularemia in laboratory animals
The epidemibiology of tularemia
Immunology of tularemia
Vaccinoprophylaxis of tularemia
System of measures in foci of tularemia
Bibliography.

Schinz, H. R. and Reich, Th.
CHANGES IN THE PERILS OF CARCINOMA IN ENGLAND, WALES AND JAPAN COMPARED WITH THE FEDERAL REPUBLIC OF GERMANY, FRANCE AND SWITZERLAND. [1962].
Order from K-H $8.75 K-H 10732

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1959, v. 84, no. 27, p. 1328-1330.

DESCRIPTORS: *Cancer, *Vital statistics, England, Japan, Germany, France, Switzerland.

Schneider, Wilhelm and Finger, Horst.
SIMIAN VIRUS AS AN UNCERTAINTY FACTOR IN THE INNOCUOUSNESS TESTING OF POLIOMYELITIS VACCINES IN MONKEY-TISSUE CULTURES. [1962] 14p. (refs. omitted).
Order from SLA $1.60 62-16299

Trans. of Arch[iv für die] Ges[amte] Virusforsch[ung] (Austria) 1961, v. 11, no. 2, p. 197-208.

DESCRIPTORS: *Virus vaccines, Viruses, Growth, Kidneys, Tissues (Biology), Primates, *Contamination, Toxicity, *Poliomyelitis.

Polio virus can still multiply in monkey kidney tissue cultures already infected with and almost destroyed by simian viruses. The multiplication of the polio virus is however not then visible in the tissue culture, but is completely covered by the cytopathogenic effect of the simian virus. In the course of further passages the polio virus, depending upon the different rates of growth and multiplication of the two viruses and of the ratio between them at the beginning of the mixed infection, can hypertrophy the simian virus and thus become unmasked. There is a discussion of the consequences for testing the innocuousness of inactivated polio vaccine. (Author)

Shumakov, A. G. and Shpinev, V. F.
ASSISTANCE GIVEN BY THE INSTITUTE OF SCIENTIFIC RESEARCH TO PUBLIC HEALTH AGENCIES. 21 Feb 62 [6]p. JPRS: 12663.
Order from OTS or SLA $1.10 62-19791

Trans. of Gigiena i Sanitariya (USSR) 1961 [v. 26] no. 9 [p. 48-51].

DESCRIPTORS: *Medicine, *Public health, Scientific organizations, Training, *Medical personnel.

Staszewski, Jerry.
TOBACCO SMOKING AND DISEASES OF THE RESPIRATORY. Feb 61, 13p.
Order from K-H $16.25 K-H 10643-c

Trans. of Polski Tygod[nik] Lek[arski] 1960, v. 15, p. 1106-1110.

DESCRIPTORS: *Tobacco, *Smokes, *Cigarettes, Diseases, *Respiratory system.

Sung, Kan.
RESEARCH ON EPIDEMIC ENCEPHALITIS B.
17 July 62 [28]p. 78 refs. JPRS: 14493.
Order from OTS or SLA $2.60 62-25980

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 96-106.

DESCRIPTORS: *Encephalitis, Encephalitis viruses, Epidemiology, Disease carriers, *Mosquitoes, *Therapy, Countermeasures, *Immunology, Virus vaccines, Chinese traditional medicine, Artificial hibernation.

We have gained many successes in the research on epidemic encephalitis B during the decade after liberation and affected greatly the prevention and treatment of this disease. For instance, through epidemiological surveys, the geographical distributions, characteristics and principle factors of epidemics of this disease, have been preliminarily mastered thereby providing scientific basis for its prevention and treatment. In treatment, the great effectiveness of traditional Chinese therapy (acupuncture, etc.) has been confirmed and its extensive use in various places, has resulted in a distinct decrease in mortality. Many successes have also been achieved in other respects. It is believed that more and greater achievements in the research on prevention and treatment of this disease will appear in the near future. (Author)

Tai, Tzu-ying.
CLINICAL STUDIES ON TYPHOID AND PARATYPHOID FEVER. 13 July 62 [22]p. 15 refs. JPRS: 14462.
Order from OTS or SLA $2.60 62-32006

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in the Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 110-115.

DESCRIPTORS: *Typhoid, Diagnosis, *Therapy, *Drugs, Chloromycetin, Intestine, Hemorrhage, Pediatrics, Adrenal cortical extract, China.

Since the use of chloromycetin or Ho-mei-su, fatality of typhoid has been distinctly reduced. According to statistics of different series of cases, the average fatality was between 4-5% (fatality was 13-20% among cases in which no drug was ministered). Deaths of these few cases were due to serious complications. Early diagnosis and the use of drugs should further reduce the fatality. (Author)

Tokuoka, Shunji.
PATHOPHYSIOLOGICAL SIGNIFICANCE OF SPERMINE IN CANCER PATIENTS, tr. by W. Himel.
30 Dec 60, 7p. NIH no. 12-20-60.
Order from OTS or SLA $1.10 62-25262

Trans. of Gann (Japan) 1956, v. 47, no. 3/4, p. 292-294.

DESCRIPTORS: *Cancer, Tissues (Biology), Pathology, Cells (Biology), Amines, Catalase.

Tung, Fan-chung and others.
ACHIEVEMENTS IN THE RESEARCH AND TREATMENT OF SEVERE BURNS. 5 June 62 [12]p.
JPRS: 14011.
Order from OTS or SLA $1.60 62-25044

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses in Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping, Dec 59, p. 237-241.

DESCRIPTORS: Therapy, *Burns, *Traumatic shock, *Kidneys, Pathology, *Body fluids, Blood volume, Determination, Radioactive isotopes, Phosphorus, Artificial hibernation, Ointments, *Infections, Inhibition, Skin, Transplantation, Wounds.

Turovskaya, F. M. and Minkh, A. A.
THE INFLUENCE OF CHRONIC DISEASES ON THE PHYSICAL DEVELOPMENT OF CHILDREN AND HEALTH MEASURES IN SCHOOLS (Vliyanie Khronicheskikh Zabolevanii na Uroven' Fizicheskogo Razvitiya Detei i Ozdorovitel'nye Meropriyatiya v Shkole). 27 Sep 61 [11]p. JPRS: 10247.
Order from OTS or SLA $1.60 62-23469

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1961 [v. 16] no. 7, p. 50-55.

DESCRIPTORS: *Physical fitness, *Children, Education, *Diseases, Tuberculosis, Rheumatism, Tonsillitis, Public health.

In this work the object of attention consists of tuberculous intoxication of the first and second degrees, rheumatic fever and chronic tonsillitis. (Author)

Vasilenko, V. Kh. and Zhukovskii, M. A.
PROBLEMS OF CLINICAL MEDICINE AT THE 15TH SESSION OF THE GENERAL MEETING OF THE ACADEMY OF MEDICAL SCIENCES USSR. 13 Feb 62 [13]p. JPRS: 12460.
Order from OTS or SLA $1.60 62-15943

Trans. of Klinicheskaya Meditsina (USSR) 1961, v. 39, no. 9, p. 5-11.

DESCRIPTORS: *Medicine, *Conferences, Public health, Diseases.

Wang, Cheng-i and Ch'en, Yu-ch'ing.
PREVENTION AND TREATMENT OF HOOKWORM DISEASE. 25 June 62 [13]p. JPRS: 14257.
Order from OTS or SLA $1.60 62-25494

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 37-40.

DESCRIPTORS: *Parasitic infections, *Epidemiology, Countermeasures, *Nematodes, Therapy, *Diagnosis, Agriculture, Fertilizers, Storage.

Wang, Tung-kwan.
ACHIEVEMENTS IN THE PREVENTION OF TRICHOMONIASIS VAGINITIS. 5 June 62 [7]p. JPRS: 14001.
Order from OTS or SLA $1.10 62-24975

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of [Theses] on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping, Dec 59, p. 59-62.

DESCRIPTORS: Inhibition, *Trichomonas, Infections, *Reproductive system, Women, China, Preventive medicine.

Wu, Cheng-chien and Ho, Kai-tseng.
RESEARCH ON PREVENTION AND TREATMENT OF KALA-AZAR. 6 July 62 [22]p. JPRS: 14393.
Order from OTS or SLA $2.60 62-25605

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 53-[59].

DESCRIPTORS: *Leishmaniasis, Therapy, *Disease carriers, Diptera, Countermeasures, Insecticides, China.

Wu Ying-kai.
CLINICAL STUDIES OF CARCINOMA OF THE ESOPHAGUS. 20 July 62 [15]p. 16 refs. JPRS: 14542.
Order from OTS or SLA $1.60 62-25973

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsueh K'o Hsueh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of [Theses on] Achievements [in the] Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 285-291.

DESCRIPTORS: *Cancer, *Esophagus, Diagnosis, Therapy, Surgery, China.

Yu, Ai-feng and Ko Ying-kwei.
ACHIEVEMENTS IN FIGHTING UTERINE CERVICAL CANCER IN CHINA. 20 July 62 [21]p. 22 refs. JPRS: 14531.
Order from OTS or SLA $2.60 62-25970

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of [Theses on] Achievements [in the] Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59]

DESCRIPTORS: *Cancer, *Reproductive system, Women, Inhibition, Detection, China.

Zubkov, A. A.
TASKS OF MEDICAL SCIENCE IN THE MOLDAVIAN SSR IN THE LIGHT OF THE PROGRAM OF THE CPSU. 2 Apr 62 [7]p. JPRS: 13271.
Order from OTS or SLA $1.10 62-23773

Trans. of Zdravookhranenie (USSR) 1961, no. 5, p. [7]-10.

DESCRIPTORS: *Medical research, *Public health, Hospitals, Medical laboratories, *Medical personnel, *Training, Education, Diseases, Control.

Zubkov, B. and Muslin, E.
MEDICINE AND TECHNOLOGY. 5 July 62 [15]p. JPRS: 14385.
Order from OTS or SLA $1.60 62-25601

Trans. of Znanie-sila (USSR) 1962 [v. 37] no. 1, p. 14-17.
Another trans. is available from OTS or SLA $1.10 as 62-23391, JPRS-12952, 13 Mar 62 [10]p.

DESCRIPTORS: *Medicine, Radiobiology, *Bioelectronics, Pressurized cabins, *Heart, *Surgery.

Pharmacology and Toxicology

THE DEVELOPMENTAL ABNORMALITIES PRODUCED BY NORNICOTINE IN CHICKEN EMBRYOS. [1962] 33p.
Order from K-H $41.25 K-H 11627-j

Trans. of Nihon Yakurigaku Zasshi (Japan) 1960, v. 56, no. 51, p. 1223-1234.

DESCRIPTORS: *Nicotine, Chickens, *Embryos, Growth

FACTS ABOUT PHARMACEUTICALS. 18 June 62 [12]p. JPRS: 14153.
Order from OTS or SLA $1.60 62-25177

Trans. of Nedelya (USSR) 1961, 10-16 Dec, p. 4-5.

DESCRIPTORS: *Drugs, *Pharmacology, Therapy, *Conferences.

ORAL TREATMENT OF DIABETES MELLITUS WITH N-4-METHYL-BENZOLSULFONYL/-N'-BUTYL-UREA (D 860) (CLINICAL AND EXPERIMENTAL INVESTIGATIONS) PTS. I-II. [1962]30p. 44 refs.
Order from SLA $2.60 62-14949

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1956, v. 81, no. 21, p. 823-835.

DESCRIPTORS: *Drugs, *Diabetes, *Sulfonamides, *Benzyl tosylates, *Toxicity, Age, Insulin, Carbohydrates, Metabolism, Dosage, Blood sugar, Body weight.

Contents:
Introduction, by H. Maske and others
Clinical findings with D 860 (report of experiences of all named clinics) by G. Mohnike and G. Stötter.

[ORAL TREATMENT OF DIABETES MELLITUS WITH N-4-METHYL-BENZOLSULFONYL/-N'-BUTYL-UREA (D 860) (CLINICAL AND EXPERIMENTAL INVESTIGATIONS)] PTS. III-IV. [1962] [72]p. 58 refs.
Order from SLA $7.60 62-14948

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1956, v. 81, no. 21/22, p. 835-846 and 887-905.

DESCRIPTORS: *Drugs, *Diabetes, Glycogen, Metabolism, *Blood sugar, Glucose, Epinephrine, Excretion, ACTH, Wine, Pancreas, Secretion, Thyroid gland, Blood, Bone marrow, Animals, Insulin, Labeled substances, Liver, Kidneys, Benzyl tosylates.

Contents:
Clinical-analytical investigations, by G. Stötter and others
Experimental studies on animals, by A. Bänder and others.
(See also 62-14949)

PROCESS FOR THE PREPARATION OF ANTIHISTAMINE PREPARATIONS. Feb 61, 8p.
Order from K-H $10.00 K-H 10573 a

Trans. of Swedish patent 168354 [pub. 1959].

DESCRIPTORS: Drugs, *Vasomotor drugs, Histamines, Inhibition

REPORT ON YUGOSLAV PHARMACEUTICAL PERSONALITIES. 21 June 62 [12]p. JPRS: 14214.
Order from OTS or SLA $1.60 62-25472

Trans. of Farmaceutski Glasnik (Yugoslavia) 1962, v. 18, no. 2/3, p. 95-97.

DESCRIPTORS: *Pharmacology, *Medical personnel, Public health, Personnel, Yugoslavia.

RESEARCH IN PHARMACOLOGY AND TOXICOLOGY IN THE USSR. 18 Apr 62 [94]p. 78 refs. JPRS: 13504.
Order from OTS or SLA $8.60 62-24016

Trans. of #Farmakologiya i Toksikologiya (USSR) 1961, v. 24, no. 1, p. 3-13; no. 3, p. 304-309; no. 5, p. 534-548, 557-561; no. 6, p. 687-690, 700-713.

DESCRIPTORS: *Pharmacology, *Drugs, Toxicity, *Nervous system, Ammonium radicals, Cyclohexanes, Cyclopentanes, Piperidine derivatives, Cholines, Oxides, Nitrogen compounds, Nicotine, Spasms, Lungs, *Diuretics, Sulfonamides, *Ganglia, Inhibition, Oxygen, *Tissues (Biology), Piperidines, Carbonic acids, Anesthetics, Phenoxy radicals, Chlorates, Acetic acids.

Contents:
The central effect of gangliolytic derivatives of quaternary ammonium bases, by M. L. Tarakhov
On the relation between the structure and effect of cholinoreactive systems of certain derivatives of 2,6-dimethylpiperidine, by Yu. I. Syrneva
Pharmacological study of the N-oxides of nicotine, by G. S. Arutyunyan and others
The ability of certain cholinolytic substances to prevent and experimental spasm of the bronchi induced in various ways, by L. G. Magazanik
The diuretic action of dihydrochlorothiazone derivatives, by B. Issekutz
The effect of ganglion-blocking substances on oxygen tension in the tissue of the superior cervical ganglion, by N. B. Vysotskaya
The pharmacology of piperidine-carbonic acid derivatives, by I. M. Sharapov
On the pharmacology of new synthetic local-anesthetic substances, by A. S. Kucheruk.

Abramova, E. V. and From, A. A.
THE EFFECTIVENESS OF THE USE OF LOW-MOLECULAR POLYVINYLPYRROLIDONE IN THE TREATMENT OF ACUTE GASTRO-INTESTINAL DISEASES IN INFANTS. 29 May 62 [9]p. 7 refs. JPRS: 13979.
Order from OTS or SLA $1.10 62-25005

Trans. of Pediatriya (USSR) 1962, v. 41, no. 4, p. 35-39.

DESCRIPTORS: *Pediatrics, *Infants, *Digestive system, Diseases, *Plasma transfusions, Drugs, *Plasma substitutes, *Vinylpyrrolidone, Toxicity.

Intravenous administration of low-molecular polyvinylpyrrolidone has a pronounced detoxifying effect in children with toxic forms of acute gastro-intestinal diseases. The deyoxifying effect of the preparation is manifested first of all by discontinuance of vomiting, spasms, regulation of arterial pressure, pulse, respiration, restoration of diuresis, etc. As compared with plasma transfusions, the effect of polyvinylpyrrolidone solution injection is more pronounced and begins earlier. In addition to a more rapid disappearance of general signs of intoxication, the stool and frequency of bowel movements return to normal earlier. The electrocardiographic disturbance are noticeabley reduced within 3-4 hours after polyvinylpyrrolidone transfusions, auricular-ventricular conduction and systolic reading return to normal, the

height of some notches (P and T) increases. There was little change in the capillaroscopic picture with transfusion therapy. The positive results of the therapeutic effect of polyvinylpyrrolidone warrant recommending it as an effective preparation for the treatment of toxic forms of acute gastro-intestinal diseases in children. (Author)

Abubakirov, N. K. and Yatsyn, V. K.
A STUDY OF THE GLYCYRRHIZIC ACID CONTENT OF THE MIDASIAN VARIETIES OF LIQUORICE (Issledovanie Sredneaziatskikh Vidov Solodki na Soderzhanie Glitsirrizinovoi Kisloty). Mar 62 [10]p. 20 refs. RTS 2030.
Order from OTS or SLA $1.10 62-24300

Trans. of Uzbek[skii] Khim[icheskii] Zhur[nal] (USSR) 1959, no. 5, p. 81-86.

DESCRIPTORS: *Plants, *Drugs, Quantitative analysis, Potassium compounds, Ammonium radicals, Hydrolysis, *Glycyrrhizic acid.

Glycyrrhizic acid contents of two local varieties of liquorice plant (Glycyrrhiza aspera and Glycyrrhiza glabra) were investigated. The latter variety has a 9% glycyrrhizic acid content and can be recommended for industrial use. An improved method was worked out for the extraction of the potassium and ammonium salts of glycyrrhizic acid and their hydrolysis to form glycyrrhetinic acid. (Author)

Bock, E. and Schneeweiss, J.
A CONTRIBUTION TO THE THERAPY OF DIABETIC NEUROPATHY. [1962] 4p.
Order from SLA $1.10 62-16036

Trans. of Münchener Medizinische Wochenschrift (West Germany) 1959, v. 101, p. 1911-1912.

DESCRIPTORS: Therapy, *Diabetes, *Neuralgia, *Octanoic acids, Valeric acids

Nineteen out of thirty-one diabetic patients, who for the most part had decompensated metabolism for a long time before the appearance of diabetic neuropathy, showed a definite improvement in their symptoms after four to seven days of therapy with thioctic acid. In thirteen patients, placebo (physiologic salt solution) preceeded thioctic acid treatment, in order to exclude the physiologic effect of injection. Placebo injections were given in the same frequency as thioctic acid, once to twice daily. When symptoms were unchanged, we substituted thioctic acid therapy after a week without the knowledge of the patient. Again in the majority of the patients (10) reduction or disappearance of symptoms was obtained.

Bock, K. D. and Gross, F.
CHANGES IN VENOUS PRESSURE AFTER ADMINISTRATION OF RENIN, ANGIOTENSIN AND NOREPINEPHRINE (Venendruckänderungen nach Gabe von Renin, Angiotensin und Noradrenalin). [1962] 11p. 10 refs.
Order from SLA $1.60 62-10914

Trans. of Naunyn-Schmiedeberg's Arch[iv] f[ür] Exp[erimentelle] Path[ologie] u[nd] Pharmak[ologie] (West Germany) 1961, v. 242, p. 188-200.

DESCRIPTORS: *Vasomotor drugs, *Blood pressure, *Veins, *Arteries, Epinephrine, Renin, Heart, Atropine, Pentothal sodium, Hypertensin, *Drugs, Ganglia, Inhibition

When administered to unanaesthetized dogs, renin, angiotensin, and noradrenaline produce a dose-dependent rise in central venous pressure. Equipressor doses of noradrenaline lead to a greater increase in venous pressure than angiotensin. Renin and angiotensin tachyphylaxis as evidenced by their effect on the arterial blood pressure can also be observed with reference to the venous pressure. The rise in venous pressure induced by angiotensin and noradrenaline, like the decrease in the heart rate can be diminished or abolished by atropine or thiopenthal anaesthesia, whereas the rise in arterial pressure tends to be enhanced. The possibility that the increase of the central venous pressure may be due to temporary heart failure can be excluded. Though it is possible that the pressor agents under study exert a direct effect on the smooth musculature of the veins, this can at most only part account for the rise in venous pressure. The increase in venous pressure observed in non-pretreated animals is therefore either attributable to the reduction in cardiac output due to the bradycardia which is of reflex origin, or, alternatively, it is provoked by venoconstriction mediated by the nervous system. In experimentally induced endotoxin shock, the rise in central venous pressure produced by angiotensin and noradrenaline is also diminished. The possible reasons for this are discussed. (Author)

Bonnet, H. and Laroche, B.
WITHDRAWAL EPILEPSY DURING GLUTETHIMIDE INTOXICATION IN A TOXICOMANIAC (Epilepsie de Sevrage au Décours d'une Intoxication par le Gluthéthimid chez une Toxicomane: Etude Électroclinique). [1962] 14p. 5 refs.
Order from SLA $1.60 62-16612

Trans. of J[ournal] de Méd[ecine] de Lyon (France) 1958, v. 39, 5 July, p. 581-587.

DESCRIPTORS: *Drugs, Glutaric acid, Amides, *Toxicity, *Epilepsy, Electroencephalography.

Bremer, Friedrich Wilhelm and Felix, Wolfgang.
ON THE EFFECTS OF NICOTINE ON THE CIRCULATION. I. LOCAL EFFECTS ON THE VESSELS OF THE SKIN AND THE SKELETAL MUSCLE OF THE CAT. Nov 60, 19p.
Order from K-H $23.75 K-H 10402-b

Trans. of Zeitschrift für Biologie (West Germany) 1960, v. 111, no. 5, p. 379-392.

DESCRIPTORS: *Nicotine, *Blood circulation, *Skin, *Muscles, Cats, Pharmacology.

Chedid, M. L. and Parant, M.
EFFECTS OF RESERPINE ON RESISTANCE TO BACTERIAL ENDOTOXINS OF RATS AND MICE TREATED WITH CORTISONE: INFLUENCE OF ADRENALECTOMY AND HYPOPHYSECTOMY (Effets de la Réserpine sur la Résistance aux Endotoxines Bactériennes du Rat et de la Souris Traités à la Cortisone. Influence de la Surrénalectomie et de l'Hypophysectomie). [1962] 9p. 18 refs.
Order from SLA $1.10 62-16079

Trans. of Ann[ales] d'Endocrinol[ogie] (France) 1961, v. 22 [no. 2] p. 118-125.

DESCRIPTORS: *Reserpine, *Drugs, *Adrenal cortical extract, Rodents, *Bacterial toxins, *Excision, *Adrenal glands, *Pituitary gland, Resistance

Hypophysectomy, like adrenalectomy, greatly increases the toxicitv of reserpine. In the last case, previous injection with cortisone protects the animal. Serpasil does not protect the normal or adrenalectomized mouse against fatal doses of endotoxin but on the contrary, increases the sensitivity of the animal to this poison. Serpasil counteracts the anti-endotoxic action of cortisone and also seems to impede the glycogenic action of the hormone. In the case of hypophysectomized rats these different inhibiting effects disappear so that the animal deprived of its hypophysis is resistant to a treatment to which it would succumb if this gland were present. Reserpine does not cause a fall in the adrenal ascorbic acid level of the hypophysectomized rat. (Author)

Chirvan-Nia, P. and Lost, P. de.
ACTION OF RESERPINE ON THE MOUSE ADRENAL (Action de la Resérpine sur la Surrénale de la Souris). May 62 [4]p. 16 refs.
Order from SLA $1.10 62-16614

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Seances] (France) 1962, v. 155, 15 Jan, p. 1516-1519.

DESCRIPTORS: *Drugs, *Reserpine, *Adrenal glands, Mice.

Reserpine produces in mice a complete atrophy of the X-zone as well as a reduction in size of the adrenal medulla and cortex. Chronic fast has the same effects. (Author)

Coessens, R., Wellens, D., and Verbeke, R.
INFLUENCE OF GUANETHIDINE ON THE ISOLATED AURICLE AND PAPILLARY MUSCLE OF CATS (Influence de la Guanethidine sur l'Oreillette et le Muscle Papillaire Isoles du Chat). [1962] 3p. 9 refs.
Order from SLA $1.10 62-16609

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Seances] (France) 1961, v. 155, p. 1417-1419.

DESCRIPTORS: *Drugs, *Guanethidine, Heart, *Cardiac muscle, Cats, *Reserpine.

Added in vitro to a preparation of isolated papillary muscle of cats, guanethidine has a very distinct positive inotropic effect. This action is absent when the animal has been previously reserpinized, and it disappears gradually in the normal preparation when the guanethidine doses are repeated after repeated washing of the muscle. Under all these conditions norepinephrine maintains its positive inotropic action while the effect of tyramine disappears. The same is true when guanethidine is given previously in vivo to the animal. The effects observed under these different conditions in the isolated auricles are on the whole analogous to those found in the papillary muscle. (Author)

Denisenko, P. P.
EXPERIMENTAL SUBSTANTIATION OF THE APPLICATION OF CENTRAL CHOLINOLYTICS IN PRACTICAL MEDICINE. 12 July 62 [32]p. 42 refs. JPRS: 14443.
Order from OTS or SLA $3.60 62-25988

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962 [v. 17] no. 3, p. 48-58.

DESCRIPTORS: Tranquilizing drugs, *Drugs, Pharmacology, Central nervous system, *Morphine.

Derkach, V. N.
THE DETOXIFYING AND DISINTOXICATING PROPERTIES OF MYCERIN WITH RESPECT TO BOTULINUS AND STAPHYLOCOCCAL TOXINS. 13 Mar 62 [8]p. 23 refs. JPRS: 12924.
Order from OTS or SLA $1.10 62-23409

Trans. of #Antibiotiki (USSR) 1961, v. 6, no. 11, p. 1006-1009.

DESCRIPTORS: *Bacterial toxins, *Antibiotics, Effectiveness, *Staphylococcus, *Botulism, Toxicity.

The antibiotic mycerin has a partial detoxifying and disintoxicating effect on the botulinus toxin as well as in experimental botulinus toxicity. Mycerin possesses certain detoxifying properties with regard to the hemalitic, necrotic, and lethal properties of staphylococcal toxin. (Author)

Dettli, L. and Spring, P.
PHARMACOLOGICAL AND CLINICAL INVESTIGATION OF A NEW SULFONAMIDE DIURETIC (CYCLOPENTHIAZIDE) IN PATIENTS WITH EDEMA. [1962] 34p. 47 refs.
Order from SLA $3.60 62-14477

Trans. of mono. Klinische Prüfung eines Neuen Sulfonamide-Diureticums (Cyclopenthiazid), Basel(?) [1961(?)] (also pub. in condensed form in D[eu]tsch[e] Med[izinische] W[ochen]schr[ift] (West Germany) 1961, v. 86, no. 48, p. 2327-2332).

DESCRIPTORS: Drugs, *Diuretics, *Sulfonamides, Dosage, *Edema, Urine

Cyclopenthiazide (CPT) a new sulfonamide diuretic, was compared pharmacologically and clinically on patients with various forms of edema. As comparative substances we used hydrochlorothiazide (HCT) as well as some common diuretics with known activity. The results confirmed our earlier investigations of this diuretic in healthy persons. According to dose, CPT is by far the most active of the diuretics known at present. To obtain the same diuretic effect, doses about 70 times as small as HCT are needed. The maximal absolute effect is the same as with HCT and is obtained with a dose of 1.5 mg. For most forms of edema the therapeutic individual dose was 0.5 mg. No essential in vivo inhibition of carbonic anhydrase takes place. The type of effect is similar, as with HCT, to that of the mercurial diuretic, since in addition to water, sodium and chloride chiefly are excreted in increased quantities. CPT causes a relatively slight increase of urinary K excretion. On prolonged use a hypochloremic alkalosis develops and sometimes also a mild kypokaliemia. As a rule these changes do not produce any clinical side effects.

Fischer, Edmundo and Tallaferro, Alberto.
CLINICAL TESTS WITH METHOXYDONE. [1962] 9p. 9 refs.
Order from SLA $1.10 62-14350

Trans. of Sem[ana] Méd[ica] (Argentina) 1960, v. 117 [no. 18] p. 678-683.

DESCRIPTORS: *Drugs, *Ketones, Heterocyclic compounds, Psychotherapy, *Psychoses, *Epilepsy, *Muscle relaxants, *Tranquilizing drugs.

Methoxydone was administered to 26 women ranging in age from 16 to 72 years, and 13 men, 29 to 72 years old. The 39 cases studied comprised: 12 with anguish hysteria; 1 with obsessive neurosis; 4 conversion hysterias and 14 with anxiety and irritability produced by real conflicts; 1 Parkinson; 4 schizophrenias, 2 of them with epilepsy; 1 anxiety depression and 2 maniacal states. The period of administration of the drug ranged from 15 days to 2 months and the dosage was 1.20 g. to 4.80 g. daily. It was proven that in the cases of reactive neurosis and reactive anguish the doses needed were of 0.4 to 1.2 g. daily, and in chronic schizophrenia, the control produced by chlorpromazine and reserpine was equaled, but without drowsiness and obtuseness, which greatly favors methoxydone. The useful dosage is from 2.4 to 4.8 g. daily. In the only 3 cases in which secondary effects appeared (18, 20, 31) (light drowsiness, headache, and ringing in the ears) a reduction of one half the dose was enough to make these symptoms disappear.

Fursov, A. F.
PHOTOCOLORIMETRIC METHOD OF ANALYZING PHOSPHACOL AND ARMINE. 6 June 62 [7]p.
JPRS: 14030.
Order from OTS or SLA $1.10 62-25053

Trans. of Aptechnoe Delo (USSR) 1962, v. 11, no. 1, p. 46-49.

DESCRIPTORS: *Colorimetric analysis, Spectrophotometers, *Drugs, *Vasomotor drugs, Phosphates, Phosphinic acids.

It was established that phosphacol and armine form colored compounds when reacted with a 1% solution of o-dianisidine in acetone in the presence of a 1% aqueous solution of sodium perborate. The color formed varies in proportion to their concentration in solution. A method was developed for photocolorimetric determination of phosphacol and armine. The photocolorimetry must be performed at 20° with a 460 mμ light filter. The determination should be conducted within limits of 2-45% of the investigated compound. The sensitivity of the determination is 0.2 mg of the investigated compound in 100 ml of solution. The error of the method does not exceed + 3%. Duration of analysis 30 minutes.

Gessner, O.
LETHAL PHOSPHINE INTOXICATION BY 'DELICIA' FUMIGATION OF GRAIN WEEVILS (ALUMINUM PHOSPHIDE). [1961] 5p. 9 refs. MDF G-139.
Order from OTS $0.50 62-11194

Trans. of [Archiv fur Toxicologie] (West Germany) 1937, v. 8, p. 13-18.

DESCRIPTORS: Beetles, *Insecticides, *Poisonous gases, *Phosphines, Toxicity, Phosphides, Aluminum compounds.

During a grain fumigation operation in 1935 with a technical aluminum phosphide marked under the name Delicia-AlP some 12 persons in a house adjoining one of the granaries were poisoned by the fumes, and one of the cases proved fatal.

Girod, C.
ACTION OF RESERPINE ON THE ADRENAL CORTEX OF THE MONKEY MACACUS SYLVANUS L. (Action de la Reserpine sur la Corticosurrénale du Singe Macacus Sylvanus L.). [1962] 5p. 15 refs.
Order from SLA $1.10 62-16601

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Seances] (France) 1962, v. 155, 5 Feb, p. 1628-1630.

DESCRIPTORS: *Drugs, *Reserpine, *Adrenal glands, Primates.

Prolonged administration of reserpine (250 μ g./Kg. daily) to adult monkeys provokes a hypertrophy of the adrenals and an increase in the adrenal cortex; this treatment also produces an increase of the glycogen in the adrenal cortex. These facts seem to suggest an activation of the pituitary-adrenal cortical axis. (Author)

Jovanovic, D., Kandic, B., Kronja, T.
YUGOSLAV REPORT ON EXPERIENCES IN THE TREATMENT OF CHRONIC MENTAL PATIENTS WITH DIETHYLAMIDE OF LYSERGIC ACID (LSD-25) (Neka Nasa Iskustva u Lecenju Dusevnih Bolesnika (Dietilamidom Lizergicne Kiseline (LSD-25)).
11 Sep 61 [16]p. JPRS: 10103.
Order from OTS or SLA $1.60 62-19704

Trans. of Vojnosanitetski Pregled (Yugoslavia) 1960, v. 17, no. 3, p. 251-256.

DESCRIPTORS: Therapy, *Mental diseases, Psychosis, Drugs, *Lysergic acid derivatives, Brain, Autonomic nervous system, Psychotherapy, Reaction (Psychology), Amides, Ethyl radicals

The treatment of chronic mental patients with LSD-25 with a special modification of the impact of LSD-25 by largactil are presented. The results did not offer proof that it is possible to cure or improve chronic mental patients with LSD-25. (Author)

Khaletskii, A. M.
BETA-SITOSTEROL. [1962] 5p. 11 refs.
Order from OTS or SLA $1.10 62-10655

Trans. of Bumazh[naya] Prom[yshlennost'] (USSR) 1961, v. 36, no. 4, p. 10-11.

DESCRIPTORS: *Steroids, Cholesterol, *Sitosterols, Synthesis, Sulfates, Cellulose.

Knick, Bernhard and Emrich, Karl.
REVERSIBILITY OF PATHOLOGICAL FLOCCULATION TESTS, ELECTROPHORETIC PATTERN AND LIVER FUNCTION TESTS IN PATIENTS WITH CHRONIC LIVER DISEASE (CHRONIC HEPATITIS, HEPATIC CIRRHOSIS) UNDER SULFONYLUREA THERAPY (D860). [1962] [3]p. [1 table refs. omitted].
Order from SLA $1.10 62-14940

[Condensed] trans. of Klinische Wochenschrift (Germany) 1957, v. 35 [no. 16] p. 812-814.

DESCRIPTORS: *Liver, *Biochemical tests, *Diseases, Electrophoresis, Sulfonyl radicals, Urea derivatives, Therapy, *Drugs, Hepatitis, *Benzyl tosylates.

Larionov, L. F.
ETHYLENE OXIDES. [1962] 5p. [refs. omitted).
Order from OTS or SLA $1.10 62-14912

Partial trans. (p. 440-442) of Khimicheskaya Nauka i Promyshlennost' (USSR) 1956, v. 1 [no. 4] p. 433-442.

DESCRIPTORS: *Ethylene oxide, *Cancer, *Chemotherapeutic agents, Drugs

Lebacq, E., Tirzmalis, A. and others.
DIURETIC EFFECT OF SU 4885, INHIBITOR OF 11-BETA-HYDROXYLATION IN THE ADRENAL CORTEX (Effet Diurétique du SU 4885, Ihnibiteur de la 11-Beta-Hydroxylation dans le Cortex Surrénal). [1962] 3p. 9 refs.
Order from SLA $1.10 62-16065

Trans. of Rev[ue] Franç[aise d']Étud[es] Clin[iques et] Biol[ogiques] (France) 1961, v. 6, [no. 9] p. 916-[917].

DESCRIPTORS: *Diuretics, Synthesis, *Aldosterone, Nucleic acids, Pituitary gland, ACTH, Kidneys, *Corticosteroids, Spiro compounds, Lactones, *Drugs *Adrenal glands.

SU 4885 (2-methyl-1, 2-bis-(3-pyridil)-1-propanone) depletes the pituitary reserve of ACTH and can be used as diuretic in edema due to hyperaldosteronism, inhibiting aldosterone formation in the adrenals, although prednisone should also be given to prevent DOC formation. The diuresis thus obtained is increased by the addition of spirolactone which inhibits aldosterone activity on the kidney tubule. (Author)

Leskova, E. S.
SEVERAL PROBLEMS OF THE BIOLOGY OF LOZHECHNITSA ARKTIKA, A NEW MEDICINAL PLANT WITH HYPOTENSIVE ACTION. 11 June 62 [8]p. 7 refs. JPRS: 14144.
Order from OTS or SLA $1.10 62-25169

Trans. of Botanicheskii Zhurnal (USSR) 1946 [v. 31] no. 8, p. 1205-1208.

DESCRIPTORS: *Plants, Biology, Growth, *Drugs, *Hypotension, Therapy, Alkaloids, Glycosides

The Arctic spoonwort is a biennial plant, developing in the first year of its life only a rosette of radical leaves. Blooming and fruitbearing of the plant begin in the second year of life. The development of the spoonwort during the second year of life from the moment of the spring sprouting to the ripening of the seeds takes 2.5 months. In this period an intensified growth of the rosette leaves and the emergence of the blossom-bearing stems occurs, Mass budding is observed during the first ten days in May, blooming on May 25, ripening in June. The seeds of the spoonwort belong to the group that sprouts easily, the minimum temperature of sprouting is 8^{o}, optimum temperature is from $15\text{-}20^{o}$. Freshly gathered seeds have a post-harvesting period of ripening, equal to approximately 64 days. An analysis of commercial production showed, that under single-cut conditions in the first year of life — in the rosette phase — the harvest of the above-ground mass amounts to 10 kg from 100 m^2; under two-time cut conditions, it amounts to 15.88 kg. The productivity in the second year of life under three-time cut conditions amounts to 23.59 kg from 100 m^2; the crop of seeds — 1.86 kg from 100 m^2. The adoption of spoonwort crops as a new promising medicinal plant with hypotensive action constitutes no difficulty for the specialized farms. (Author)

Mashkovskii, M. D., Il'yuchenok, R. Yu., and Ostrovskaya, R. U.
THE EFFECT OF I[M]IZINE ON THE BIOELECTRIC ACTIVITY OF THE BRAIN. 9 Apr 62 [9]p. 11 refs. JPRS: 13368.
Order from OTS or SLA $1.10 62-23798

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1962, v. 62, no. 2, p. 178-182.

DESCRIPTORS: *Drugs, *Psychoses, *Bioelectronics, *Brain, Cerebral cortex, Stimulation, Visual perception, Emotions.

The experimental material presented shows that imipramine, in doses of 0.5-1 mg/kg, produces no notable alterations in background bioelectrical activity. Administration of the drug in these doses is associated with an alteration in the lability of cortical cells, which can be detected through the use of rhythmic light stimulation at different frequencies. The improvement in "following capacity" for rapid light impulses and the deterioration in it for rhythmic light of low frequency may indicate an increase in the functional mobility of cortical neurons associated with imipramine administration. When the dose of imipramine is increased to 3-5 mg/kg a weakening of the "arousal reaction" is observed; this alteration attests to the drug's blocking effect upon the reticular formation of the brain stem. (Author)

Matzkowski, H. and Wiezorek, W. D.
THE PHARMACOLOGY AND TOXICOLOGY OF ORGANIC PHOSPHORIC ACID ESTERS. 20 Oct 61 [9]p. JPRS: 10699.
Order from OTS or SLA $1.10 62-19726

Trans. of Deutsche Gesundheitswesen (East Germany) 1961, v. 16, no. 16, p. 717-719.

DESCRIPTORS: *Pharmacology, *Toxicity, Organic compounds, *Phosphorus, *Poisoning, Therapy, Atropine, Acetylcholines, Poisonous gases, Chemical warfare agents, Countermeasures.

Recently accumulated experiences with astropine therapy of poisoning with phosphoric acid esters. Stress the importance of intravenous atropine treatment as soon as possible following intoxication, with large doses regardless of the severity of the intoxication. The intramuscular injection of relatively small doses will not assure a sufficiently rapid adsorption of the drug which is needed to control the endogenous acetylcholine poisoning with sufficient rapidity. Supportive measures for the circulatory system should be started at least at the same time as the atropine treatment; animal experiments have shown that atropine is no longer very effective after circulatory collapse has set in, and there is always the danger that atropine may cause ventricular fibrillation in a heart muscle already damaged by hypoxemia. The success of the therapy can be considerably improved by artifical respiration. It seems doubtful whether the spasms or excitation should be treated with barbiturates (phenobarbital, hexobarbital) because of the possible impairment of the respiratory function (center) as described above. Morphine is absolutely contraindicated because of its depressant effect upon respiration. In cases of oral intoxication the administration of large amounts of activated charcoal has been particularly valuable, since the latter is capable of absorbing considerable quantities of alkylphosphates present in the intestine.

Meier, R. and Schär, B.
ACTION OF DRUGS INCREASING DEFENSE AGAINST INFECTION ON LEUKOCYTE MIGRATION IN VITRO (Wirkung von Infektabwehr Verstärkenden Pharmaka auf die Leukocytenemigration in Vitro). [1962] 8p. 1 ref.
Order from SLA $1.10 62-16607

Trans. of Pathologia et Microbiol[ogia] (Switzerland) 1960, v. 23, p. 344-350.

DESCRIPTORS: *Drugs, Inhibition, *Infections, *Leukocytes, *Corticosteroids, *Lipoproteins, Salicylates, Pyrazines, Glycosides, Furan derivatives, Intestinal bacteria

Various synthetic substances, some of which are active prophylactically and others therapeutically in gram-positive or gram-negative infections in mice in the experiment on defense against infection, were tested as to their effect on chick cells in vitro. The test objects used were leukocyte migration increased by Proteus lipopolysaccharides (PLPS) and proliferating vascular fibroblasts. The substances can be divided into groups by means of the in vitro tests: (1) substances having a therapeutic effect on gram-positive germs, which in vitro increase the leukocytic reactions without exerting any effect on the fibroblasts; (2) substances having chiefly a prophylactic effect on gram-positive and gram-negative infections, with an inhibiting effect on the leukocyte reaction and with an effect on the protoplasm of the vascular fibroblasts; (3) substances having a therapeutic effect in gram-positive and gram-negative infections with an inhibiting effect on the leukocyte reaction without any effect on the vascular fibroblasts; and (4) substances having an effect on the defense against infection of the intact animal with no action on cells in vitro. The possible site of attack of the groups of substances in the complex defense against infection is discussed. (Author)

Miklevich, A. V.
THE SEARCH FOR PHARMACOLOGICALLY ACTIVE SUBSTANCES IN A SERIES OF INDOLE DERIVATIVES. 25 June 62 [9]p. JPRS: 14262.
Order from OTS or SLA $1.10 62-25503

Trans. of Zdravookhranenie Belorussii (USSR) 1962 [v. 8] no. 3, p. 38-42.

DESCRIPTORS: *Drugs, *Pharmacology, *Indoles, *Toxicity, Phenyl radical, Intestines, Pathology, Muscles, *Serotonin, Inhibition, Poisoning.

Compounds 1-benzyl-2-methyl-3-dimethylaminomethyl-5-methoxindole (indole 1), 1-benzyl-2-methyl-3-diethylaminomethyl-5-methyoxyindole (indole 26), 1-phenyl 2-methyl-3-(β-dimethylaminopropionyl)-5-methoxyindole (indole 2), and 1-phenyl-2-methyl-3-dimethylamino propyl-5-methoxyindole (indole 3) were tested. In an acute experiment with intraperitoneal introduction, the compounds showed rather low toxicity. Introduction of indole-1 and BAS (the benzyl analogue of serotonin) into the stomachs of white rats and guinea pigs in doses of 5 mg/kg daily for 30 days caused no changes in the behavior of the animals and had no effect on their weight. All four indoles suppressed the contractive activity of an isolated rabbit intestine, reduced its tone of smooth musculature, and blocked the action of serotonin on it. A vasodilative effect was observed with concentrations of 1:10,000 on the vessels of a rabbit ear. All indoles suppressed the activity of a frog heart. The toxicity of the compounds was intensified and their pharmacological activity was weakened by the introduction of a phenyl radical into the 1-position of the indole nucleus instead of a benzyl radical, the replacement of methyl radicals by ethyl radicals in the amino group of the side chain, and an increase in the distance between the indole nucleus and the amino group in the 3-position.

Milosevic, M., Vojvodic, V., and Milosevec, V.
PROTECTIVE EFFECT OF CHOLINESTERASE REACTIVATORS IN ANIMALS POISONED BY ORGANIC PHOSPHORUS INSECTICIDES (Zastitno Dejstvo Reaktivayora Holinesterza Kod Aivotinja Otrovanih Organofosfornim Insekticidima). 11 Sep 61 [9]p.
JPRS: 10114.
Order from OTS or SLA $1.10 62-19703

Trans. of Vojnosanitetski Pregled (Yugoslavia) 1960, v. 17, no. 5, p. 525-528.

DESCRIPTORS: Poisoning, *Animals, *Insecticides, *Cholinesterase, Inhibition, Phosphines, Phosphorus compounds, Drugs.

PAM-2 and especially TMB-4, in spite of certain drawbacks, represent a significant contribution and open new possibilities in the antidote therapy of organic phosphorus compound poisoning. (Author)

Mohnike, G., Ulrich, H. and others.
CLINICAL AND LABORATORY OBSERVATIONS DURING THE INITIAL PERIOD OF TREATING DIABETICS WITH D 860. [1962] [5]p.
Order from SLA $1.10 62-14933

Trans. of Deutsche Medizinische Wochenschrift (West Germany)1957, v. 82 [no. 36] p. 1526-1528.

DESCRIPTORS: *Drugs, *Diabetes, *Toxicity, Insulin

With the initiation of D 860 therapy in diabetics, side effects including undesirable side effects on the albumin metabolism and the plasma amino nitrogen were rarely observed or not observed at all. We found a temporary increase in water and sodium diuresis, the possible causes of which were discussed. We reported the clinical observation of a diabetic with nephropathy in whom an acute reversible deterioration occurred during BZ 55 therapy. A combination therapy with insulin plus D 860 does not always lead to a lessening of the insulin requirement which we explained by the magnitude of the absolute insulin requirement. (Author)

Murgia, Aldo.
MEDICAL USES OF SILICONES. [1962] 6p. 7 refs.
Order from SLA $1.10 62-14403

Trans. of Minerva Chirurgica (Italy) 1954, v. 9 [no. 23] p. 1132-1134.

DESCRIPTORS: *Drugs, Silicon compounds, Skin, *Ointments, *Antibiotics, *Healing, Surgery, *Silicones.

In treatment of various ailments requiring protection of the skin from moisture or from contact with pathological fluids, or to prevent irritation or mortification, the use of silicone ointments fully meets the need. Even when a state of mortification is in progress their use (best with the type containing antibiotics) stops the mortification process in a short time, sometimes within 24 hours, and causes it to regress, thus facilitating spontaneous healing of the skin itself. We wish to emphasize the special benefit in using silicone ointments containing antibiotics in postoperative treatment of mastectomy patients by neoplasty. (Author)

Ogawa, Y. and Kishigami, M.
EFFECTS OF SEVERAL AUTONOMIC NERVE-BLOCKING AGENTS ON THE ACTION OF CROTON-OBETAINE ESTER IN THE INTESTINES. [1962] 3p.
Order from K-H $3.75 K-H 5737b

Trans. of Japanese language article issued by Shinogi Institute, n. d., n. d.

DESCRIPTORS: *Drugs, *Autonomic nervous system, Inhibition, *Intestine, Glycines, Esters, Crotonic acid

Otto, Hellmut and Mai, Klaus.
FEASIBILITY AND LIMITATIONS OF ORAL THERAPY OF JUVENILE DIABETES MELLITUS. [1962] 6p.
Order from SLA $1.10 62-16058

Trans. of mono. [paper] from Kongress der International Diabetes Federation [held at] Dusseldorf, 21-25 July 58. [Proceedings, sect. on diabetes mellitus].

DESCRIPTORS: *Drugs, *Diabetes, *Children, Benzyl tosylates, Children, Insulin, Guanidines

The practibility of oral therapy in juvenile diabetes is still limited, its indications are very restricted. With substances available to date, sulfonylureas and biguanids, only a few juveniles can be satisfactorily treated. (Author)

Ruggieri, P. de.
16-METHYLPREGNATES. 1 Nov 61, 7p. [footnotes omitted] 22 refs.
Order from SLA $1.10 62-14957

Trans. of il Farmaco; [Edizione Pratica] (Italy) 1961, v. 16, no. 8, p. 583-590.

DESCRIPTORS: *Steroids, Preparation, *Pregnandiols, Methyl radicals, Acetates, Drugs.

A description is given of the preparation of various 16-methylpregn-16-enes and 16β-methylpregnanes, also those oxygenized in C 11, starting from the corresponding pregn-16-enes. (Author)

Schaepdryver, A. F. de and Preziosi, P.
CATECHOLAMINE CONTENT OF VARIOUS ORGANS AND TISSUES OF MICE AND DOGS TREATED WITH HYDROCHLOROTHIAZIDE (Contenuto in Catecolamine di Diversi Organi e Tessuti di Topo e di Cane Trattati con Idroclorotiazide). [1962] [4]p. 11 refs.
Order from SLA $1.10 62-10731

Trans. of Soc[ietà] Ital[iana di] Biol[ogia] Sper[imentale]. Boll[ettino] 1961, v. 37, 15 Mar, p. 189-192.

DESCRIPTORS: *Drugs, *Hypertension, *Epinepherine, Adrenal glands, Spleen, Liver, Heart, *Diuretics, *Thiazines, Tissues (Biology)

Šimko, V. and Bucko, A.
THE INFLUENCE OF ORAL ANTIDIABETIC AGENTS ON THE EXPERIMENTAL HEPATIC LESION. [1962] [7]p. 26 refs.
Order from SLA $1.10 62-14913

Trans. of Acta Med[ica] Scand[inavica] (Sweden) 1961, v. 169 [no. 2] p. 201-204.

DESCRIPTORS: *Drugs, *Diabetes, *Toxicity, *Liver, Inhibition, Glycogen, *Benzyl tosylates

Our findings indicating a protective action of the antidiabetic Invenol in hepatic lesion were confirmed in our experiments with Rastinon. By means of biochemical analysis we were not able to find any signs of a toxic influence of peroral antidiabetics on the liver. (Author)

Stubbé, L. Th. F. L.
IRON DEFICIENCY ANEMIA AND THE EMPLOY OF ACETOSAL. [1962] 18p. (Eng. summary omitted) 2 refs.
Order from SLA $1.60 62-14572

Trans. of Nederlands Tijdschrift voor Geneeskunde, 1961, v. 105, no. 34, p. 1673-1678.

DESCRIPTORS: *Iron, *Anemia, *Toxicity, Hemorrhage, Labeled substances, *Acetylsalicylic acid, *Drugs.

Takahashi, Kiyoshi.
ARSENICAL CHEMOTHERAPEUTIC DRUGS. VI. SYNTHESES OF DIARYLARSINIC ACIDS BY BART'S METHOD. [1962] [10]p. 15 refs.
Order from SLA $1.10 62-16212

Trans. of [Yakugaku Zasshi] (Japan) 1952, v. 72, p. 529-532.

DESCRIPTORS: *Arsenic compounds, Antibiotics, *Drugs, *Chemotherapeutic agents, *Arsonic acids, *Arsines, Synthesis, Hydrides, Amines, Phenyl radicals, Nitro radicals, Iodides, Chlorides, *Azo radicals.

Takahashi, Kiyoshi.
ARSENICAL CHEMOTHERAPEUTIC DRUGS. VII. SYNTHESES OF DIARYLARSINIC ACIDS WITH ARYLDICHLOROARSINES. [1962] 10p. 12 refs.
Order from SLA $1.10 62-16213

Trans. of [Yakugaku Zasshi (Japan) 1952, v. 72, p. 533-537].

DESCRIPTORS: *Arsenic compounds, Synthesis, *Drugs, Chemotherapeutic agents, *Arsines, Hydrides, Amines, Copper compounds, Chlorides, Nitro radicals, Methyl radicals, Phenyl radicals, *Azo radicals.
See also 62-16212

Truhaut, R. and Herbert, M.
RESEARCH ON THE TOXICOLOGY OF PYRIDINE: EFFECTS ON GROWTH AND BASAL METABOLISM; ANATOMICAL-PATHOLOGICAL LESIONS; LOCALIZATIONS AND ELIMINATION. [1962] 23p.
Order from ATS $27.50 ATS-80P61I

Trans. of Folia Med[ica] (Italy) 1959, v. 42, no. 9, p. 1025-1060.

DESCRIPTORS: *Pyridines, Toxicity, Growth, Metabolism, *Anatomy, *Pathology, Injuries, Distribution, Excretion

Viaud, Pierre.
THE AMINO DERIVATIVES OF PHENOTHIAZINE (Les Amines Derivees de la Phenothiazine). [1962] [26]p. [265 refs. omitted] 4 refs.
Order from SLA $2.60 62-14953

Trans. of Journal of Pharmacy and Pharmacology (Gt. Brit.) 1954, v. 6 [no. 6] p. 361-389.

DESCRIPTORS: *Amines, *Phenothiazine derivatives, Chemotherapeutic agents, Drugs, Therapy.

Weis, K.-H.
CLINICAL INVESTIGATIONS WITH SYNTHETIC HYPERTENSIN II AMIDE (Klinische Untersuchungen mit Synthetischem Hypertensin-II-Amid). [1962] 10p. 23 refs.
Order from SLA $1.10 62-10917

Trans. of der Anaesthesist (Germany) 1960, v. 9, [no. 10] p. 315-318.

DESCRIPTORS: *Vasomotor drugs, *Hypertensin, Epinephrine, Blood pressure, Hypotension, *Drugs, Ganglia, Inhibition, Amides

In clinical experimental examination the effect of synthetic hypertensin II-amid upon the circulation of 9 healthy men was compared with that of 1-norepinephrine. 4 of the test persons received the substances subcutaneously. 5 in an intravenous infusion where at the same time the blood pressure was artificially lowered by intravenous infusion of trimetaphan (Arfonad). According to the method of Broemser and Ranke the physical circulation quantity was determined. The clinical examination took place during the routine work of the anaesthesiology department. Hypertensin II is more effective in raising the blood pressure than 1-norepinephrine. In the foreground there is a peripheral vasoconstriction, with an impressive raise of the total peripheral resistance. The lowered blood pressure caused by ganglionic block is quickly normalized by Hypertensin II. A tachyphylaxia could not yet be seen after many hours with intravenous infusion of hypertensin II. The indication for the application of Hypertensin II represents that of 1- norepinephrine. (Author)

Radiobiology

MEDICAL RADIOLOGY, 1962, VOL. 7, NO. 3: EXCERPTS. 15 June 62 [21]p. 2 refs. JPRS: 14130.
Order from OTS or SLA $2.60 62-25171

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 3, p. 24-27 and 85-91.

DESCRIPTORS: *Radiobiology, Medicine, Transplantation, *Bone marrow, *Radiation sickness, Countermeasures, Radiation hazards, Radiation effects, Man.

Intraosseous administration of homologous bone marrow to lethally irradiated rats, by K. A. Lebedev
New regulations for work with radioactive substances in institutions of the system of the Ministry of Health, by E. I. Vorob'ev and P. I. Moisetsev
Background of irradiation of the human organism, by Yu. V. Sivintsev: book review by L. A. Pertsov (Fonovoe Obluchenie Chelevecheskogo Organizma, Moscow, 1960, 95p.).

MEDICAL RADIOLOGY, 1962, VOL. 7, NO. 4: [SELECTED ARTICLES]. 27 June 62 [37]p. 59 refs. JPRS: 14299.
Order from OTS or SLA $3.60 62-25538

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 4, p. 47-57, 64-66, 71-75, 85-89.

DESCRIPTORS: Radiobiology, *Radiation injuries, Surgery, *Blood proteins, Radiation effects, *X-rays, *Infrared radiation, *Adrenal glands, *Linear accelerators.

Contents:
Clinical-morphological comparisons in the surgical method of treating radiation injury, by E. D. Savchenko and others
Clinical studies of protein and protein fractions of plasma of people who have been in prolonged contact with ionizing radiation, by O. I. Kudryashova
The biological interaction of X- and infrared rays, by G. A. Mallabyu
Functional changes in the supravenal medulla after the effect of internal irradiation on the body, by V. I. Kandror
Planning specifications of premises for medical linear accelerators, by S. L. Kanevskii.

RADIOBIOLOGY, 1961, VOL. 1, NO. 3. 8 Feb 62 [422]p. refs. JPRS: 12387.
Order from OTS or SLA $22.25 62-19174

Trans. of Radiobiologiya (USSR) 1961, v. 1, no. 3, p. 321-462.

DESCRIPTORS: *Radiobiology, *Tissues (Biology) *Radioprotective drugs, Antioxidants, Radiation effects, Liver, Inhibition, Cysteine, Gamma rays, Nucleic acids, Thymus, Cells (Biology), Nuclei (Biology), Adenine, Neutrons, Nucleotides, *Radiation sickness, Metabolism, Bone, Glycines, Coagulases, Plants, Tumors, Cholinesterase, Blood, Radioactive isotopes, Mitosis, Sensitivity, Aorta, Motor reactions, Kidneys, Water, Therapy, Azoles, Carboxyl radicals, Acetylcholines, Hypothalamus, Nervous system, Uranium compounds, Flourides, Regeneration, Cornea, Beta particles, Calcium, *Spermatogenesis, X-rays, Embryos, Pregnancy, Eye, Genetics, Wheat, *Seeds, Dosage, Growth

Contents:
The mechanism of inactivation of radicals and peroxides by natural tissular antioxidants, by A. I. Zhuravlev and others
On the changes of electric parameters of the liver of irradiated animals after prophylactic administration of cysteine, by A. A. Mikhailova
Qualitative changes of DNA of pea plantules after gamma irradiation, by V. I. Tokarskaya
Effect of gamma irradiation upon DNA synthesis in isolated cell nuclei of the thymus. I. Incorporation of formate-C^{14} and adenine-C^{14} into nitrogen DNA bases of isolated nuclei, by E. V. Budilova
Investigation of the effects of gamma and neutron irradiation upon the content of free nucleotides in tissues of the animal organism, by E. A. Ivanitskaya
Glycine-C^{14} metabolism in calcified tissues during acute radiation sickness, by A. A. Prokhonchukov
Changes in the activity of cholinesterase of blood serum under the effect of internal irradiation with low doses of radioactive sodium, by L. V. Zhidkova
Changes of blood thromboplastin during acute radiation sickness, by N. Ya. Lagutina
Effects of extracts from irradiated and unirradiated plants of Vicia faba upon the growth of tumors and homologous normal tissues, by L. M. Kryukova and others
Effect of antimitotic substances from irradiated plants upon growth of mice, by V. A. Kopylov
On the radiosensitivity of earthworms, by R. I. Pogosyan
Investigation of the afferent portion of unconditioned reflex arch of the aorta during acute radiation sickness, by A. N. Balashova
Changes in functional activity of kidneys in dogs during chronic radiation sickness caused by strontium-90, by Z. I. Poluboyarinova
Effects of the degree of tissue hydration of the body of the crustacean balanus improvisus upon its radiosensitivity, by E. V. Burlakova and I. M. Limarenko
Comparative data on the protective and therapeutic action of diamide derivatives of imidazoledicarboxylic acids in radiation injuries, by S. Ya. Arbuzov and others
Acetylcholine metabolism in the hypothalamic region of the cerebrum of dogs after acute radiation sickness, by B. I. Davydov
Effect of uranium tetrafluoride upon higher nervous activity of dogs, by E. N. Klimova
Processes of regeneration in the center and at the periphery of the cornea of mice after gamma-radiation injury, by G. P. Gruzdev
Disturbances of higher nervous activity in the offspring of dogs exposed to long-term chronic internal irradiation with beta rays from strontium-90, by V. A. Nazarov
Comparative behavior of strontium and calcium in the organism of the cow, by L. A. Buldakov and N. I. Burov
Changes of spermatogenic function in dogs upon multiple irradiation with X-rays, by N. E. Trusova

Effects of X-ray irradiation of rats prior to pregnancy upon subsequent embryogenesis, by E. A. Pozhidaev
Critical period in the development of scleral papillae of the eye of chick embryos revealed under the action of X-ray irradiation, by V. F. Puchkov
Morphological changes of internal organs of mice after single X-ray irradiation with large doses, by L. V. Funshtein and others
Some data on the effects of irradiation of the endosperm of wheat seed upon the growth and development of plants, by L. M. Fonshtein
Dose distribution along the axis of a plane beta applica tor, by A. M. Kononenko and others
Results of irradiation of rubin radish prior to sowing in the hotbed, by N. M. Berezina and others

REPORTS OF THE ACADEMY OF SCIENCES USSR, 1962, VOL. 142, NO. 3: [SELECTED ARTICLES]. 9 July 62 [20]p. 36 refs. JPRS: 14415.
Order from OTS or SLA $1.60 62-25722

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 142, no. 3, p. 699-705.

DESCRIPTORS: *Fats, Cells(Biology), *Protons, *Radiation injuries, *Nucleic acids, *Propyl ethers, *Gallic acid, *Radiobiology, Radiation effects

Contents:
The importance of fat reserves of the cell for its reactivation following radiation injury, by V. M. Alekseeva and M. N. Meisel'
Relative biological effectiveness (RBE) of 660 Mev protons, by E. B. Kurlvandskava and others
Reduction of the degree of injury of DNA molecules under the effect of radiation in the presence of propylgallate, by N. V. Nikolaeva and others

SANITARY REGULATIONS RELATING TO WORK WITH RADIOACTIVE SUBSTANCES AND SOURCES OF IONIZING RADIATIONS. 6 Dec 61 [110]p. JPRS: 11279.
Order from OTS or SLA $9.10 62-13617

Trans. of mono. Gosudarstvennyi Komitet po Ispol'zovaniyu Atomnoi Energii, Moscow, 1960 [117 p.].

DESCRIPTORS: *Radiological contamination, *Radioactive isotopes, Control, Sanitary engineering, Industrial medicine, Water supplies, Sewage, *Decontamination, *Radioactive waste, Gamma rays, Shielding, Beta particles, Range, Diseases.

Chapters are devoted to: (1) General principles; (2) Location of laboratories, institutions, and undertakings intended for work involving the use of radioactive isotopes, (3) Obtention, recording, storage and transportation of radioactive substances, (4) Work with sealed sources, (5) Control and measuring instruments and appliances incorporating sealed radiation sources, (6) Work with radioactive substances in unsealed form, (7) Ventilation and heating, (8) Water supply and sewage, (9) Cleaning and decontamination of rooms and equipment and removal of contaminants in emergencies, (10) Collection, removal and burial of solid and high-level liquid wastes, (11) Personal protection measures and personal hygiene, and (12) Radiometric and dosimetric control. Appendixes are (1) Basic concepts, definitions and terminology, (2) Maximum permissible levels of ionizing radiations, (3) Gamma-ray shielding, (4) Maximum range of beta particles, (5) Gamma equivalents of some isotopes, (6) List of industries and occupations for which workers must undergo pre-employment and periodical medical examinations, (7) List of diseases and other contra-indications preventing acceptance for work or continuance of work with radioactive substances and sources of ionizing radiations, (8) Decontamination methods for rooms, laboratory equipment, and hands, (9) Recommended outfits for personal protection, and (suppl.) Measurement of radioactive contamination of surfaces by the smear method.

Dolgov, E. G.
EXPERIMENTAL DATA ON THE EFFECT OF ANTIBIOTICS ON CERTAIN MANIFESTATIONS OF ACUTE RADIATION PATHOLOGY. 5 Apr 62 [10]p. (4 Eng. refs. omitted) 16 refs. FTD-TT-62-144.
Order from OTS or SLA $1.10 62-24748

Unedited rough draft trans. of #Antibiotiki (USSR) 1961, v. 6, no. 5, p. 402-406.

DESCRIPTORS: *Antibiotics, *Radiation sickness, Tissues (Biology), Permeability, *Penicillin, *Streptomycins, Experimental data.

In conditions of acute radiation sickness a study was conducted of changes in the tinctorial properties of tissues of white rats and the therapeutic effect of a combination of penicillin and streptomycin. Changes were detected in the sorption properties of the cellular protein structures. It was demonstrated that the application of combinations of antibiotics after exposure to radiation exerts a favorable action on certain manifestations of radiation sickness. (Author)

Glazunov, I. S., Gus'kova, A. K., and Livanov, M. N.
BASIC MECHANISMS OF REACTION OF THE NERVOUS SYSTEM DURING ACUTE RADIATION SICKNESS. 9 Feb 62 [12]p. 43 refs. JPRS: 12480.
Order from OTS or SLA $1.60 62-15932

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1961, v. 61, no. 10, p. 1574-1578.

DESCRIPTORS: *Reaction (Physiology), *Nervous system, *Radiation sickness, Radiation injury, Pathology.

Klemparskaya, N. N. [Alekseeva, O. G.] and others.
PROBLEMS OF INFECTION, IMMUNITY AND ALLERGY IN ACUTE RADIATION DISEASES, tr. by L. Venters. 1961, 1v.
Order from PP 50s

Trans. of mono. [Voprosy Infektsii, Immuniteta i Allergii pri Ostroi Luchevoi Bolezny, Moscow, 1958]. Also available from OTS $1.50 as AEC-tr-3767, Oct 59, 133p.

DESCRIPTORS: *Radiation sickness, Microorganisms, Infections, *Immunology, *Allergy, Bibliography.

Molokanov, K. P.
ROENTGENOLOGY OF OCCUPATIONAL DISEASES AND INTOXICATIONS, CHAPS. I-II AND IV. 28 Mar 62 [33]p. 33 refs. JPRS: 13214.
Order from OTS or SLA $3.60 62-23758

Trans. of mono. Rentgenologiya Professional'nykh Zabolevanii i Intoksikatsii, Moscow, 1961, p. 161-169, 171-177, 200-205.

DESCRIPTORS: *Industrial medicine, *Radiation effects, Atmosphere, *Pressure, *Vibration, X-rays *Ultrahigh frequency, *Pneumatic devices

Nikl, Istvan.
THE DOSE LOAD ON REPRODUCING ORGANS IN X-RAY DIAGNOSIS. 12 Dec 61 [23]p. JPRS: 11491.
Order from OTS or SLA $2.60 62-19673

Trans. of Fizikai Szemle (Hungary) 1961, v. 11, no. 7, p. 210-214.

DESCRIPTORS: *Dosage, *X-rays, Diagnosis, Therapy, Genetics, *Reproductive system.

Rubin, B. A., Metlitskii, L. V. and others.
THE USE OF IONIZING RADIATIONS FOR CONTROL OF DORMANCY IN POTATOES DURING STORAGE. 5 Mar 62 [95]p. 88 refs. JPRS: 12791.
Order from OTS or SLA $8.60 62-23420

Trans. of Biokhimiya Plodov i Ovoshchei (USSR) 1961, v. 6, no. 6, p. 5-57.

DESCRIPTORS: Radiobiology, Radiation effects, *Plants, *Potatoes, Storage, *Preservation, Metabolism *Carbohydrates, *Nucleic acids, Colloids, Diseases

New data are presented on the effect of ionizing radiation on carbohydrate metabolism, nucleic exchange, and on the resistance of potato tubers to infectious and physiological diseases. (Author)

Vasilenko, V. Kh., Novikov, I. P., and Petelina, V. V.
ACTIVITIES OF THE BUREAU OF THE DEPARTMENT OF CLINICAL MEDICINE OF THE ACADEMY OF MEDICAL SCIENCES USSR IN 1960 [AND] SCIENTIFIC CONFERENCE ON THE PROBLEM "REGENERATING AND COMPENSATING PROCESSES DURING RADIATION SICKNESS" (NO. 2). 14 Feb 62 [21]p. JPRS: 12520.
Order from OTS or SLA $2.60 62-19164

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1961 [v. 16] no. 11, p. 75-79 and 88-93.

DESCRIPTORS: Conferences, *Regeneration, *Radiation sickness, Physiology, Inhibition, Therapy, *Medicine.

Vatsadze, G. S. and Kakulya, M. E.
ACTION OF X-RAYS DURING TOTAL IRRADIATION UPON THE CONTENTS, COMPOSITION AND STRUCTURAL VISCOSITY OF DNA OF THE RABBITS BRAIN. [1962] 1p.
Order from SLA $1.10 62-14765

Trans. of article from an unidentified source, 1961, v. 12.

DESCRIPTORS: *Radiation effects, *X-rays, Rabbits, *Brain, *Nucleic acids, Viscosity, Nucleotides

In spite of the fact that the nerve cells and the brain tissue of these rabbits continue to grow increasing in size and differentiating, momentary total irradiation at 800/r does not influence notably the amount of DNA, its structural viscosity or the content of purine and pyrimidine bases of DNA. Ionizing irradiation evokes the decrease of the amount of timine in DNA; this suggests that ionizing radiation damages the tissue with dividing cells changing DNA composition.

Surgery

Brodskii, A. F.
STRIPS OF PRESERVED HUMAN CADAVER SKIN. 7 Feb 62 [12]p. 28 refs. JPRS: 12366.
Order from OTS or SLA $1.60 62-15947

Trans. of Novyi Khirurgicheskii Arkhiv (USSR) 1961 [v. 40] no. 10, p. 26-32.

DESCRIPTORS: *Skin, Preservation, *Tissues (Biology), *Transplantation, Growth, *Healing, Wounds, Regeneration.

Research suggests that pulverized human skin in the form of films should, with respect to its biological and therapeutic properties, not only approximate intact fresh or preserved skin, but also may possess certain advantages. Films of human skin are a potent biological stimulator of the processes of granulation and epithelialization, and ensure good properties in the newly-formed tissue. They protect the wound against mechanical irritation. In treating ulcers, films not only stimulate the regenerative process, but also markedly improve the trophic responses of the tissue. This is evident in reduced pain, pigmentation, edema, and itching.

Burtsev, A. N.
DECUBITUS ULCER OF THE SMALL INTESTINE FROM A TUBE INTRODUCED TO FEED THE PATIENT AFTER A GASTRECTOMY. 7 Mar 62 [6]p. JPRS: 12835.
Order from OTS or SLA $1.10 62-19768

Trans. of Vestnik Khirurgii (USSR) 1961, v. 87, no. 11, p. 111-112.

DESCRIPTORS: *Suppurative infections, Intestine, *Surgery, *Stomach, Excision, Feeding.

Huang, Chia-ssu, Meng, Chi-mou and others.
SURGICAL ACHIEVEMENT IN COMMUNIST CHINA. 5 July 62 [60]p. 158 refs. JPRS: 14386.
Order from OTS or SLA $5.60 62-25598

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 207-237.

DESCRIPTORS: *Surgery, *Anesthesia, Hypothermia, Intravenous injections, Peptic ulcers, Intestines, Obturation, Pathology, *Blood vessels, Diseases, *Gallbladder, Pancreas, *Thoracic surgery, *Tuberculosis, Lungs, *Cancer, Esophagus, *Reproductive system, *Urinary tract, Kidney stones, Orthopedics, Neurology, Plastic surgery.

Kiss, Bela.
SYNTHETIC MATERIALS IN MEDICAL THERAPY. 7 Dec 61 [7]p. JPRS: 11391.
Order from OTS or SLA $1.10 62-19681

Partial trans. (some sections summarized) of Nepszeru Technika (Hungary) 1961, v. 10, no. 7, p. 213-215.

DESCRIPTORS: *Synthetic fibers, *Surgery, Joints (Physiology), Skull, *Plastics, Medical equipment, Bone fracture, Therapy.

Lan, Hsi-chun.
SURGERY OF THE HEART AND GREAT VESSELS. 20 July 62 [19]p. 34 refs. JPRS: 14541.
Order from OTS or SLA $1.60 62-25974

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 270-278.

DESCRIPTORS: *Surgery, *Thoracic surgery, *Heart, *Blood vessels, Thorax, *Congenital anomalies, Pathology, Anesthesia, Hypothermia, Artificial heart, Storage.

Potashov, L. V., Dumpe, E. P. and others.
BLOOD HEPARINIZATION IN EXPERIMENTAL SURGICAL OPERATIONS USING THE NIIEKhAiI SYSTEM OF THE HEART-LUNG APPARATUS [AND] SURGICAL TREATMENT OF THE VENA CAVA SUPERIOR SYNDROME. 17 Apr 62 [26]p. 27 refs. JPRS: 13500.
Order from OTS or SLA $2.60 62-23988

Trans. of Grudnaya Khirurgiya (USSR) 1962, v. 4, no. 1, p. 12-17 and 52-58.

DESCRIPTORS: *Heparin, *Surgery, Dosage, Drugs, *Artificial heart, Blood coagulation, Fibrin, Hemorrhage, Diseases, *Blood vessels, Thorax, Medical equipment.

Sheng, Yun-ku, Sung, Hung-chao, and Yeh, Hui-fang.
PROGRESS IN CESAREAN SECTION. 13 July 62 [15]p. JPRS: 14474.
Order from OTS or SLA $1.60 62-25996

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of [Theses on] Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 340-346.

DESCRIPTORS: *Gynecology, Surgery, *Childbirth, Anesthesia, Blood transfusion, Congenital anomalies, Infections, Mothers, Infants, *Vital statistics, China

Sochivko, L. F., Volodina, N. V., and Poletaeva, V. M.
THE USE OF A FLOW-THROUGH OXYGENOMETER TYPE PO-01 IN AN ARTIFICIAL BLOOD CIRCULATION SYSTEM. 8 Mar 62 [8]p. 8 refs. JPRS: 12859.
Order from OTS or SLA $1.10 62-23407

Trans. of Vestnik Khirurgii (USSR) 1961, v. 87, no. 11, p. 38-40.

DESCRIPTORS: *Respirators, Artificial heart, *Oxygen, *Medical equipment, Blood circulation.

Wu, Ying-kai.
SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS. 20 July 62 [16]p. 13 refs. JPRS: 14540.
Order from OTS or SLA $1.60 62-25968

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi Hsia Chuan (Collection of Theses on Achievements in Medical Sciences in Commemoration of the 10th National Foundation Day of China) v. 2, Peiping [Dec 59] p. 279-285.

DESCRIPTORS: *Surgery, *Pulmonary tuberculosis, *Thoracic surgery, *Lungs, Pleura, Excision, Tuberculosis.

Zoology

Grunin, K. Ya.
ON THE BOTFLIES (DIPTERA, HYPODERMATIDAE) PARASITIC IN GAZELLA SUBGUTTUROSA GUELD, tr. by R. Ericson. 18 May 60, 5p. (10 figs. omitted) 1 ref.
Order from OTS or SLA $1.10 62-15629

Trans. of Ent[omologicheskoe] Obozr[enie] (USSR) 1956, v. 35, no. 3, p. 716-723.

DESCRIPTORS: *Diptera, *Parasites, Classification, Reproduction, Biology, Insects.

Adults of botflies parasitic in Gazella subgutturosa Gueld. were reared in 1955 on Mangyschlak [German spelling] peninsula. The new genus Crivellia Grunin is erected for Przhewalskiana corinnae Crivelli. (Author)

Lanzing, W. J. R.
BIOLOGY OF THE PETROMYZONIDAE (Biologie van de Petromyzonidae) tr. by T. P. Van Dyk. 1962, 13p. 26 refs. FRBC Trans. Series no. 384.
Order from NRCC NRCC C-3971

Trans. of Vakblad voor Biologen (Netherlands) 1957, v. 37, no. 9, p. 1-10.

DESCRIPTORS: *Biology, *Lampreys, *Classification, Distribution, Reproduction.

Malyshev, S. I.
THE ORIGIN OF SECONDARY PHYTOPHAGY IN TEREBRANTIA (HYMENOPTERA, TEREBRANTIA S. PARASITICA) tr. by R. Erickson. 18 Nov 59, 5p.
Order from OTS or SLA $1.10 62-15628

Trans. of Leningrad[skoe] Obshch[estvo] Estestvoisp[ytatelei]. Trudy (USSR) 1957, v. 73, no. 4, p. 229-233.

DESCRIPTORS: Insects, *Hymenoptera, Reproduction, Feeding, Parasitism, *Plants.

Pospelova-Shtrom, M. V.
ORNITHODORINI TICKS AND THEIR EPIDEMIOLOGICAL SIGNIFICANCE. 12 June 62 [317]p. 244 refs. JPRS: 14087.
Order from OTS or SLA $19.75 62-25179

Trans. of mono. Kleshchi-Ornitodoriny i Ikh Epidemiologicheskoe Znachenie, Moscow, 1953, 235p.

DESCRIPTORS: Disease carriers, *Parasites, *Ticks, Distribution, Classification, Morphology, Ecology, Control, Epidemiology, *Pathology, *Veterinary medicine, *Spirochetosis, *Bibliography.

This book presents the results of extensive studies that were made of the Ornithodorinae in USSR and foci of tick-borne spirochetosis. M. V. Pospelova-Shtrom was able to work out the natural system of the family Argasidae (including subfamilies of Ornithodorinae) and to precisely characterize all Ornithodorinae species and subspecies in the fauna of USSR. A firm base for differentiating vectors of tick-borne spirochetosis and providing efficient control is established. Information is included on the distribution of Ornithodorinae in the territory of USSR, the distribution of these and other species of Ornithodorinae in different types of terrain, comparative ecology, and comparative parasitology of individual Ornithodorinae species, their relations with hosts and spirochetes, their epidemiological importance, types of shelters inhabited by them, control of Ornithodorinae, and prophylactic measures against spirochetosis. The subfamily Ornithodorinae is separated into two tribes: the Ornithodorini and Otobiini. The first are typical, sheltered, waylaying blood-suckers, the second represent different degrees of transition to an actoparasitological mode of life. Only Ornithodorini are vectors of spirochetes.

Puchkov, V. G.
BASIC TROPHIC GROUPS OF PHYTOPHAGOUS HEMIPTEROUS INSECTS AND CHANGES IN THE CHARACTER OF THEIR FEEDING DURING THE PROCESS OF DEVELOPMENT, tr. by R. Ericson. Jan 60, 11p.
Order from OTS or SLA $1.60 62-15633

Trans. of Zool[ogicheskii] Zhur[nal] (USSR) 1956, v. 35, no. 1, p. 32-44.

DESCRIPTORS: *Insects, Feeding, Growth, Classification, *Plants.

Rohdendorf, B. B.
PALEARCTIC SPP. OF THE GENUS WOHLFAHRTIA B. B. (DIPTERA, SARCOPHAGIDAE), tr. by R. Ericson. 18 May 60, 5p. (26 figs. omitted).
Order from OTS or SLA $1.10 62-15641

Partial trans. (201-205) of Ent[omologicheskoe] Obozr[enie] (USSR) 1956, v. 35, no. 2, p. 201-229.

DESCRIPTORS: *Diptera, Classification, Distribution, Insects

Romanov, A. N.
AUTOMATIC TAGGING OF WILD ANIMALS AND PROSPECTS FOR ITS USE, tr. by J. M. MacLennan. [1962] [7]p. [CSIRO Trans. no.] 4236.
Order from OTS or SLA $1.10 62-23315

Trans. of Zoologicheskii Zhurnal (USSR) 1956, v. 35, no. 12, p. 1902.

DESCRIPTORS: *Animals, Classification, *Ecology, Automatic.

A new method of mass marking of animals is proposed, based on the use of auto-tagging snares.

Sorokin, V. P.
THE OOGENESIS AND REPRODUCTION CYCLE OF THE COD (GADUS MORHUA LINN). [1962] [28]p. (16 figs. omitted) 40 refs. [DSIR] NLL M. 3524.
Order from OTS or SLA $2.60 62-25580

Trans. of P[olyarnyi] N[auchno-Issledovatel'skii] I[nstitut] Morskogo R[ybnogo Khozyaistva i] O[keanografii]. Trudy (USSR) 1957, v. 10, p. 125-144.

DESCRIPTORS: *Eggs, Growth, *Cod, *Reproduction, Ovaries, *Fishes.

The results are adduced of research in the annual development of the ovaries of the cod and an attempt is made to establish a scale denoting the stages of their development. (Author)

Vinogradova, E. B.
PHOTOPERIODIC REACTION IN THE MALARIA MOSQUITO, ANOPHELES MACULIPENNIS MESSEAE, FALL. [1962] [10]p. 13 refs.
Order from OTS or SLA $1.10 62-15724

Trans. of Leningrad U. Uchenye Zapiski (USSR) 1958, no. 240 [p. 52-60].

DESCRIPTORS: *Rhythm, Malaria, *Mosquitoes, *Photoperiodism, Climatic factors, Light, Temperature, Time, Ovaries, Reproduction, Growth

The physiological state of females of A. maculipennis messeae is determined by the illumination program during the developmental cycle: a short day (12 to 15 hr light out of the 24) brings about effectual diapause in all individuals; a long day (20 to 22 hr) evokes development without diapause to 100% diapause is gradual, with about 50% of individuals in diapause at the 16 hr day (at 23°C). The varying duration of illumination during the developmental cycle does not affect the duration of the development of the larvae nor the bloodsucking activity of the imago of A. maculipennis. The experiments exhibit a correlation between the degree of fatness and the state of the females' gonard. Females which developed under short-day conditions (14 to 15 hr) show a tendency toward fattening. In C. pipiens pipiens diapause is manifested in cessation of bloodsucking and arises under the influence of the short day. Bloodsucking activity decreases as the length of illumination decreases from 24 hr of light to the threshold figure (16 hr). The physiological state of females of A. maculipennis is determined by the illumination program applying to the III-IV instar larvae and subsequent developmental stages. Under Leningrad conditions the first appearance of individuals in diapause is observed in the first ten days of August (length of day, 19 to 18 hr) and the large-scale appearance in the third decade of August (length of day 17 hr and less). The critical length of day, at which gonotrophic harmony is breached and diapause takes place in various geographical forms of A. maculipennis, varies with the latitude, decreasing from north to south. (Author)

Yashkul, V. K.
ON THE CAUSES OF SUMMER INACTIVITIES OF MATURE TICKS (DERMACENTOR MARGINATUS SULZ) (O Prichinakh Letnei Neaktionosti Polovozrelykh Kleshchei (Dermacentor Marginatus Sulz)) tr. by Oleg Jukov. [1962] [19]p. (foreign text included) 8 refs. [CSIRO] Trans. no. 5707.
Order from OTS or SLA $1.60 62-32240

Trans. of Zoologicheskii Zhurnal (USSR) 1960, v. 39, no. 1, p. 45-52.

DESCRIPTORS: Etiology, Periodic variations, *Physiology, *Temperature, *Humidity, Ecology, *Ticks, Climatic factors

High sensitivity of Dermacentor marginatus to the alterations of humidity and temperature of the environment, as well as their behaviour (motive activity) at various temperatures were studied in a special apparatus (thermatoscope). These data, as well as ecological and faunistic observations show that the main cause of the summer inactivity of the tick described is the onset of microclimatic conditions of biotopes which are unfavourable to the ticks, i.e. of high temperature and low humidity. Biological importance of the summer inactivity of D. marginatus consists in the fact that the transition of parasites beneath the litter and in microcracks of the soil in summer increases their ability to survive thus contributing to the preservation of homes of high population. (Author)

Zaslavskii, V. A.
MATERIAL ON THE STUDY OF WEEVIL LARVAE OF THE SUBFAMILY HYPERINAE (COLEOPTERA, CURCULIONIDAE) tr. by R. Ericson. 3 Dec 59, 9p. (11 figs. omitted).
Order from OTS or SLA $1.10 62-15638

Trans. of Zool[ogicheskii] Zhur[nal] (USSR) 1959, v. 38, no. 2, p. 208-220.

DESCRIPTORS: *Insects, *Beetles, Classification, Morphology, Biology.

CHEMISTRY

ABSTRACTS FROM REFERATIVNYI ZHURNAL. KHIMIYA, 1962, NO. 1. 16 May 62 [8]p. JPRS: 13811.
Order from OTS or SLA $1.10 62-24716

DESCRIPTORS: *X-ray diffraction analysis, Indium alloys, Antimony alloys, Tellurium alloys, *Deuterium, Ethylenes, *Alumina-silica catalysts, *Zirconium, Electrochemistry, Spectrographic analysis, *Rare earths, *Hafnium, *Tantalum, Calorimeters, *Construction materials industry, *Tungsten compounds, Oxides, *Rhenium, Oxidation.

Contents:
1-B-213; 1-B-620; 1-D-67; 1-D-82; 1-I-157; 1-I-180.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNAL: CHEMISTRY, 1961, NOS. 13-16. 31 May 62 [57]p. JPRS: 13941.
Order from OTS or SLA $5.60 62-25014

Trans. of selected abstracts from Referativnyi Zhurnal. Khimiya (USSR) 1961, nos. 13-16.

DESCRIPTORS: *Chemistry, Abstracting, *Chemical industry, *Chemical engineering, Physical chemistry, Geochemistry, Organic compounds, Inorganic substances, Food, Fats, Detergents, Odorants, Wood, Fuels, Natural gas, Petroleum, Polymers, Chemical analysis, China.

JOURNAL OF GENERAL CHEMISTRY, 1944, VOL. 14, NO. 9/10: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 8p. 34 refs.
Order from OTS or SLA $1.10 62-10852

Abstract trans. of Zhurnal Obshchei Khimii (USSR) 1944, v. 14, no. 9/10, p. 920-940, 974-990, 993-994, 1003-1024.

DESCRIPTORS: *Chemistry, Abstracting, *Iodides, *Azides, *Sulfur, Catalysis, *Calcium compounds, Hydrides, *Glucosides, Sulfonamides, Condensation, *Carboxylic acids, *Amines, Hydrazine, Methanes, *Adipic acid, Ethyl ethers, *Polymers, Fluorine compounds, *Phthalic anhydrides, Carbazoles.

Contents:
Analogs of the iodoazide reaction; sulfur catalysis, by V. M. Karasik
Determination of water in hydrated salts with calcium hydride, by A. G. Elitsur
Glucosides of sulfanilamides, by S. I. Lur'e and M. M. Shemyakin
Research on polycondensation. I. Products of condensation of certain dicarboxylic acids and diamines, by V. V. Korshak and S. R. Rafikov
Research on polycondensation. II. Condensation of hexamethylenediamine with adipic acid, by S. R. Rafikov and V. V. Korshak
Synthesis of symmetrical dibenzoylethylana, by B. M. Bogoslovskii
Research on polycondensation. III. Effect of the ration of the reaction components on the growth of the polyamide chain, by S. R. Rafikov and others
Reaction between aromatic diamines and dicarboxylic acids. IV. Reaction of 2,7-diaminofluorene with phthalic anhydride, by B. A. Porai-Koshits
Reaction between aromatic diamines and dicarboxylic acids. V. Reaction of 2,7-diaminocarbazole with phthalic anhydride, by B. A. Porai-Koshits and G. S. Salyamon.

SOVIET RESEARCH ON THE SWELLING OF CELLULOSIC MATERIALS 1949-56. Chemistry Collection Series. 1961, 1v.
Order from CB $25.00

DESCRIPTORS: *Cellulose, Cellulose chemistry, Materials, Scientific research.

TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 46, NO. 5: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 5p. 6 refs.
Order from OTS or SLA $1.10 62-10781

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 46, no. 5, p. 182-187 and 193-199.

DESCRIPTORS: *Spectrographic analysis, *Infrared spectroscopy, *Gases, *Amplifiers, Valves, *Geochemistry, *Geophysics, *Strontium, *Oils.

Contents:
Spectrophone, an instrument for investigation of infrared absorption spectra of gases and for quantitative and qualitative spectrum analysis of multicomponent gas mixtures, by M. L. Veingerov
Valve amplifier for a spectrophone, by S. A. Kogan and others
The geochemistry of strontium, by A. P. Vinogradov and T. F. Borovik-Romanova
Contribution to the problem of the hydrogeological conditions of formation and preservation of oil deposits, by N. K. Ignatovich.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 46, NO. 7: [PARTIAL TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 4p. 5 refs.
Order from OTS or SLA $1.10 62-10782

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 46, no. 7, p. 283-286 and 296-298.

DESCRIPTORS: *Activated carbon, *Charcoal, Adsorption, Microstructure, Fatty acids, *Methanols, Rubber, *Plants, Kok-saghyz, Physiology.

Contents:
Sorption and heats of sorption of vapors and the structure of activated charcoal, by A. V. Kiselev and others
Chemical changes occurring in roots of kok-sagyz during summer rest, by S. M. Mashtakov.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 47, NO. 7: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 2p. 1 ref.
Order from OTS or SLA $1.10 62-10788

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 47, no. 7, p. 472-477 and 494-496.

DESCRIPTORS: *Diethyl ethers, *Ethanols, Chlorine compounds, *Polymers, Hardening, Molecular association, *Tin, *Minerals.

Contents:
Formation of $\beta\beta'$-dichlorodiethyl ether in the synthesis of 2-chloroethanol, by E. Shilov
Molecular mechanism of the solidification of polymers, by Z. N. Zhurkov
Tin minerals in the Maikhura Skarn Deposit (Ghissar Range) by A. G. Ivashentsov.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 48, NO. 1: [SELECTED ABSTRACTS]. [1962] 5p. 7 refs.
Order from OTS or SLA $1.10 62-10790

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 48, no. 1, p. 31-38, 43-45, 50-52.

DESCRIPTORS: *Naphthalenes, Peroxides, *Hydrazine, Carboxylic acids, *Oils, *Bitumens, Vanadium, Nickel, *Manganese, Ores

Contents:
Decahydronaphthalene peroxide, by K. I. Ivanov and V. K. Savinova
Products of linear condensation of diamines with carboxylic acids, by V. V. Korshak and S. R. Rafikov

Attempted correlation of the oils and bitumens of the Ural-Volga Region, based on microelements, by L. Gulyaeva
The Murzhik deposit of manganese ores, by P. P. Mikhailov

Sliwa, Alfred.
GRAPHITE OXIDE OR "ACID" (Tlenek Lub "Kwas Grafitowy"). [1962] [48]p. (foreign text included) 105 refs.
Order from SLA $4.60 62-16085

Partial trans. (p. 21-31) of Wiadomosci Chemiczne (Poland) 1959, v. 13, no. 1(139) p. 1-39.

DESCRIPTORS: Carbon, *Graphite compounds, Oxides, Acids, Potassium compounds, Chlorates, *Crystal structure, *Chemical bonds, Bibliography.

Physical and chemical properties of graphite and its crystal structure is discussed. There have been given methods of preparation and properties of graphite intercalates with alkali metals, with alkali metals and ammonia or methylamine, compounds with fluorine and bromine, graphite oxide, compounds with acids, with halides of metals and other compounds. Mechanism of formation of their compounds is discussed as well as their crystal structures and character of chemical bonds (Author)

Vishnevskii, N. E.
ISOTHERMAL LABORATORY APPARATUS. [1962] 3p. 2 refs.
Order from OTS or SLA $1.10 62-14857

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961 [v. 6] no. 4, p. 56-57.

DESCRIPTORS: *Laboratory equipment, Heat transfer, Towers (Chemistry)

The apparatus is designated for creation of isothermal conditions in continuous liquid-phase processes, accompanied with an important evolution of heat. Conditions of the processes: pressure up to 200 atm., temperature until 300 C, useful volume 0.2 L., productivity 2 L/hour and more. The gas volume of reactor is reduced to a minimum through installation of a pad between rotor and lower ball-bearing, made of stainless steel as also all reactor parts, contacting a corrosive medium. (Author)

Vol'fkovich, S. I.
WORK OF THE INSTITUTES AND LABORATORIES OF THE DEPARTMENT OF CHEMISTRY OF THE ACADEMY OF SCIENCES U. S. S. R. [1962] 4p.
Order from OTS or SLA $1.10 62-14141

[Condensed] trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1944, no. 2/3, p. 156-169.

DESCRIPTORS: *Scientific research, Inorganic substances, Organic compounds, Colloids, Electrochemistry, Physical chemistry, Geochemistry, Radium.

Excerpts of a report made to the general meeting of the Academy of Sciences on February 18, 1944, are given.

CONTINUOUS EXTRACTION PROCESS OF NICOTINE FROM TOBACCO. [1962] 945 words.
Order from K-H $6.25 K-H 11917a

Trans. of French patent 674, 507 [pub. 1929].

DESCRIPTORS: *Tobacco, *Nicotine, Separation.

FILTERS PARTICULARLY FOR THE DETOXICATION OF TOBACCO SMOKE AND PROCESS FOR THEIR PRODUCTION. Feb 61, 1930 words.
Order from K-H $13.75 K-H 10573 f

Trans. of German patent 1, 039, 904 [pub. 1958].

DESCRIPTORS: Particulate filters, *Tobacco, *Smokes, *Cigarettes, Production, Toxicity, Separation.

MASS FOR TOBACCO SMOKE FILTERS. Oct 60, 5p.
Order from K-H $6.25 K-H 10359

Trans. of German patent explanation memo 1, 018, 770 [pub. 1957].

DESCRIPTORS: *Tobacco, *Smokes, *Particulate filters, *Cigarettes.

PROCESS AND EQUIPMENT FOR THE REMOVAL OF NICOTINE FROM FINISHED TOBACCO PRODUCTS. [1962] 1390 words.
Order from K-H $8.75 K-H 11917b

Trans. of German patent 124 286 [pub. 1900].

DESCRIPTORS: Processing, *Laboratory equipment, Separation, *Nicotine, *Tobacco.

PROCESS FOR DENICOTINIZATION OF TOBACCO. [1962].
Order from K-H $6.25 K-H 5434c

Trans. of German patent 557 285 [pub. 1932].

DESCRIPTORS: Processing, *Tobacco, Separation, *Nicotine.

PROCESS FOR RECOVERY OF NICOTINE-FREE TOBACCO. [1962] 3p.
Order from K-H $3.75 K-H 5434b

Trans. of German patent 557 151 [pub. 1932].

DESCRIPTORS: *Nicotine, *Tobacco, Separation.

PROCESS FOR THE MANUFACTURE OF SMOKE-FILTER BODIES FOR TOBACCO PRODUCTS, FROM A FIBER SLURRY, AND SMOKE-FILTER BODIES MANUFACTURED ACCORDING TO THIS PROCESS. Aug 60, 1608 words.
Order from K-H $8.75 K-H 10281 l

Trans. of German patent 960707 [pub. 1957].

DESCRIPTORS: *Processing, *Cigarettes, Particulate filters, Fibers, Liquids

SMOKE-FILTER BODIES FOR TOBACCO PRODUCTS, ESPECIALLY AS FILTER MOUTHPIECE FOR CIGARETTES. Aug 60, 2160 words.
Order from K-H $11.25 K-H 10281 k

Trans. of German patent 960,788 [pub. 1957].

DESCRIPTORS: *Smokes, *Cigarettes, Tobacco.

UNIFORM SPECIFICATIONS FOR THE ANALYSIS OF TOBACCO SMOKE. [1962] 6p.
Order from K-H $7.50 K-H 11816 i

Trans. of Beiträge zur Tabakforschung [sic] 1962, no. 5, p. 196-198.

DESCRIPTORS: Standards, *Chemical analysis, *Smokes, Cigarettes, *Tobacco.

Barkemeyer, H. and Seehofer, F.
ON A NEW METHOD FOR THE PRECIPITATION OF TOBACCO SMOKE IN LIQUIDS. [1962] 5p.
Order from K-H $6.25 K-H 11411-1

Trans. of Beiträge zur Tabakforschung [sic] 1961, no. 3 p. 93-96.

DESCRIPTORS: Precipitation, *Tobacco, *Smokes, Liquids.

Bol'shova, T. A. and Starobinets, G. L.
DISTRIBUTION CHROMATOGRAPHY OF SOLID PARAFFIN HYDROCARBONS FROM PETROLEUM ON THE CARBAMIDE. [1962] 6p. 14 refs.
Order from OTS or SLA $1.10 62-14845

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961 [v. 6] no. 5, p. 17-21.
Another trans. is available from ATS $9.00 as ATS-53N56R [1961] 5p.

DESCRIPTORS: *Urea, Petroleum, *Waxes, *Hydrocarbons, Chromatographic analysis

The method of distributive chromatography for normal hydrocarbons, composing the petroleum paraffins, by application of the carbamide as immobile phase is briefly exposed.

Brückner, K.
MINERAL CONSTITUENTS. [1962] 20p.
Order from K-H $25.00 K-H 3138a

Trans. of German language mono. The Biochemistry of Tobacco, n.d., n.d., chap. 8, p. 424-438.

DESCRIPTORS: *Tobacco, Biochemistry, *Minerals.

Budevski, O. and Simova, L.
COMPLEXOMETRIC METHOD OF DETERMINING ALUMINUM. 14 Feb 62 [6]p. JPRS: 12519.
Order from OTS or SLA $1.10 62-19156

Trans. of Bulgarska Akademiya na Naukite. Doklady, 1961, v. 14, no. 2, p. 179-182.

DESCRIPTORS: *Aluminum, Sodium compounds, Fluorides, *Chemical indicators, Chemical analysis.

A method is proposed for determining aluminum in natural and other materials, based on the specific reaction of aluminum complexes with sodium fluoride. We recommend the use of methyl-thymol blue (or xylenol orange) as indicator in titrating the released complexions. The establishment of aluminum follows immediately after the assay, or the hydroxyde precipitate obtained through systematic analysis of the silicate, has dissolved in hydrochloric acid. (Author)

Busev, A. I.
THE ANALYTICAL CHEMISTRY OF INDIUM. International Series of Monographs on Analytical Chemistry, v. 5. Nov 62, approx. 300p.
Order from PP approx. $12.50

Trans. of mono. [Analiticheskaya Khimiya Indiya, Moscow, 1958, 242p.].

DESCRIPTORS: *Indium, *Indium compounds, Reagents, Chemical analysis, Spectrographic analysis, Hydrolysis.

Ciampelli, F., Bucci, G. and others.
ANALYSIS OF ETHYLENE-PROPYLENE COPOLYMERS BY MEANS OF INFRARED SPECTROSCOPY. Aug 62, 2300 words, 8 refs.
Order from CTS(Chem) $9.20 CTS(Chem)-294
subsequent copies $1.50/ea

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 5, p. 489-493.

DESCRIPTORS: *Polymers, *Ethylenes, *Propenes, Chemical analysis, *Infrared spectroscopy.

Ciuhandu, Ch.
A NEW METHOD FOR THE DETERMINATION OF CARBON MONOXIDE IN AIR. [1962] 12p.
Order from K-H $13.00 K-H 6922

Trans. of article from an unidentified Rumanian source, n.d.

DESCRIPTORS: Determination, *Air, *Contamination, Carbon compounds, *Monoxides.

Cuzin, Jean.
DETERMINATION OF ANTHRACENE, PYRENE, BENZO(A) PYRENE IN CONDENSATES OF TOBACCO SMOKE. [1962] 20p.
Order from K-H $25.00 K-H-11455d

Trans. of mono. (paper) presented Jan 60, S. E. I. T. A.

DESCRIPTORS: *Anthracenes, *Pyrenes, *Benzopyrene, *Tobacco, Smokes, Cigarettes.

Dittman, H. F. K.
CONSIDERATIONS ABOUT TOBACCO PRODUCTS WITH PARTICULAR REFERENCE TO BRAZILIAN CIGARETTES. [1962] 14p.
Order from K-H $17.50 K-H 5710 a

Trans. of Spanish language article from an unidentified source, n. d.

DESCRIPTORS: *Tobacco, Cigarettes, *Brazil.

Flaschka, H.
ON RAPID ANALYSES IN THE GLASS-TECHNOLOGICAL LABORATORY (Über Schnellanalysen im Glastechnischen Laboratorium). [1962] [16]p. (foreign text included) 44 refs.
Order from SLA $1.60 62-10924

Trans. of Sprechsaal (West Germany) 1955, v. 88, no. 9, p. 188-191.

DESCRIPTORS: *Glass, Metals, Titration, Solutions, Reagents, Chemical analysis.

Gel'man, N. E., Wang, W. Y., and Bryushkova, I. I.
THE USE OF CONDUCTOMETRY FOR THE DIRECT MICRODETERMINATION OF OXYGEN IN ORGANIC COMPOUNDS. 12 Apr 62 [10]p. 12 refs.
Order from OTS or SLA $1.10 62-16033

Trans. of #Zavodskaya Lab[oratoriya] (USSR) 1961, v. 27, [no. 1] p. 24-28.

DESCRIPTORS: *Organic compounds, *Oxygen, *Microanalysis, Pyrolysis, Conductivity.

A conductometric final step is proposed for the direct microdetermination of oxygen by the Korshun-Bondarevskaya method. The principle of the method is as follows. The organic compound is pyrolyzed in an inert-gas atmosphere (nitrogen or argon). The gaseous pyrolysis products are passed over a layer of platinized carbon black at 900°, where the oxygen is quantitatively converted to CO : $RO + C \longrightarrow CO$. The CO obtained is further oxidized over CuO at 300° to CO_2, which is absorbed by dilute alkali in a conductivity cell. The amount of CO_2 is determined from the change in conductivity of the absorbent solution.

Grade, K.
SEPARATION OF AMARYLLIDACEAE ALKALOIDS BY PAPER CHROMATOGRAPHY. 30 Nov 61 [5]p. JPRS: 11248.
Order from OTS or SLA $1.10 62-19722

Trans. of Zeitschrift für Chemie (East Germany) 1961, v. 1, no. 5, p. 158.

DESCRIPTORS: *Chromatographic analysis, *Alkaloids, Galanthamine, Butanols, *Pharmacology

Grimmer, G.
A METHOD FOR THE DETERMINATION OF 3,4-BENZO-PYRENE IN TOBACCO-SMOKE CONDENSATION. [1962] 19p.
Order from K-H $23.75 K-H 11411-2

Trans. of Beiträge zur Tabakforschung [sic] 1961, no. 3, p. 107-116.

DESCRIPTORS: *Benzopyrenes, *Tobacco, *Smokes, Cigarettes.

Grob, K.
DETERMINATION OF THE PH VALUE AND BUFFERING CAPACITY OF CIGARET SMOKE AS A ROUTINE METHOD. [1962] 5p.
Order from K-H $6.25 K-H 11411-3

Trans. of Beiträge zur Tabakforschung [sic] 1961, no. 3, p. 97-100.

DESCRIPTORS: Tobacco, *Smokes, *Cigarettes, Hydrogen ion concentration, Buffers.

Hagino, K.
SPECTROPHOTOMETRIC DETERMINATION OF MINUTE AMOUNTS OF NITRATE ION. [1962] 9p. (8 figs. omitted) 3 refs.
Order from SLA $1.10 62-16517

Trans. of [Nihon] Kagaku Zasshi (Japan) [1961] v. 82, p. 841-845.

DESCRIPTORS: *Spectrographic analysis, Colorimetric analysis, Ions, *Nitrates, Ammonia, Zinc, Magnesium compounds.

The NO_2 ion was prepared by reduction of NO_3 with zinc in aqueous ammonia, and complexed for colorimetry by Griess-Romijn (GR) reagent. Aqueous ammonia and metallic zinc were added to the sample solution; NO_2 was produced by shaking a constant number of times. After centrifugal separation, HCl was added to the filtrate: neutralization was then effected with ammonia. GR reagent was added, and the amount of NO_3 determined by absorbance measurements at 520mμ. This method was found to be very accurate for determining 0.005-0.1 ppm NO_3-N. Above 0.1 ppm, alcohol was added after addition of GR reagent, and the absorbance measured at 530 mμ (30% alcohol); this technique is useful for 0.02-0.7 ppm. NO_3-N. The role of Mn(II) for reduction in ammonia was also studied. (Author)

Hirsjärvi, V. P., Kenttämaa, E. and others.
THE DETERMINATION OF FLOURINE IN THE PRESENCE OF SOME INTERFERING IONS. [1962] [9]p. 19 refs.
Order from SLA $1.10 62-10699

Trans. of Z[eitschrift für] Anal[ytische] Chemie (West Germany) 1959, v. 171, p. 354-359.

DESCRIPTORS: *Flourine, *Ions, Sulfates, Chlorides, Phosphates, Borates, Iodides, Carbonates, Distilling plants.

In conducting the fluorine determination using the modification of the Willard-Winter method, the amounts of sulfates, chlorides, or orthophosphates used in the experiments do not cause any errors in the determination of milligram quantities of fluorine. The influence of borates, iodides, and carbonates is also so small that they are of no significance. It is not necessary to take any special precautions in these analyses before distillation, unless one wishes to bind the iodides by means of silver perchlorate. (Author)

Hjern, L.
APPLICATION OF THE SILVER DIETHYLDITHIOCARBAMATE METHOD FOR THE DETERMINATION OF ARSENIC IN TOBACCO. [1962] 14p.
Order from K-H $17.50 K-H 11401d

Trans. of Beiträge zur Tabak[forschung] [sic] 1961, no. 3, p. 75-81.

DESCRIPTORS: *Determination, *Arsenic, *Tobacco, Chemical analysis, *Carbamates.

Hoffman, D. and Wynder, E. L.
THE QUANTITATIVE DETERMINATION OF PHENOLS IN TOBACCO SMOKE. [1962] 10p.
Order from K-H $12.50 K-H 11411-4

Trans. of Beiträge zur Tabakforschung [sic] 1961, no. 3, p. 101-106.

DESCRIPTORS: *Phenols, Determination, *Tobacco, *Smokes, Cigarettes.

Khalitov, R. Sh.
DETERMINATION OF OXYGEN IN TITANIUM BY ISOTOPE DILUTION (Opredelenie Kisloroda v Titane Metodom Izotopnogo Razbavleniya) tr. by V. N. Pavloff. 1962, 10p. 4 refs. NRCC Technical trans. 1022.
Order from NRCC $0.50 NRCC C-3969

Trans. of Akad[emiya] Nauk SSSR. Komissiya [po] Anal[iticheskoi] Khim[ii]. Trudy, 1960, v. 10[13] p. 129-136.

DESCRIPTORS: *Titanium, Impurities, *Oxygen, *Isotopes, Chemical analysis, Alloys, Vacuum furnaces

Klimova, V. A. and Merkulova, E. N.
THE PREPARATION OF MOLECULAR SILVER FOR MICROELEMENTAL ANALYSIS. 16 Apr 62 [3]p. 2 refs.
Order from OTS or SLA $1.10 62-16034

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1962, v. 17, p. 142.

DESCRIPTORS: Silver compounds, Nitrates, *Silver, Molecules, *Microanlysis, Electrolytes.

Klimova, V. A. and Anisimova, G. F.
VOLUMETRIC FINISH FOR THE MICRODETERMINATION OF CARBON AND HYDROGEN AFTER DECOMPOSITION OF ORGANIC COMPOUNDS BY COMBUSTION IN AN OXYGEN STREAM. 13 Feb 62 [6]p. 16 refs.
Order from OTS or SLA $1.10 62-14960

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961 [no. 11] p. 2088-2090.

DESCRIPTORS: *Organic compounds, *Combustion, Decomposition, *Carbon, *Hydrogen, *Volumetric analysis, Water vapor, Chemical reactions

A series of halogen-containing organoboron, organophosphorus, and organosilicon compounds were tested as compounds to react with water vapors to form HCl for the volumetric determination of hydrogen in organic compounds. Phenylboron dichloride best met the requirements. The possibility was shown of a volumetric finish for the micro-determination of carbon and hydrogen in organic compounds after combustion in a stream of oxygen in an unfilled tube, using phenylboron dichloride, which forms HCl with water vapors. (Author)

Krilov, E. I. and Sharnin, A. A.
SYNTHESIS AND PROPERTIES OF NYOBIUM BRONZES. [1962] 10p. 11 refs.
Order from OTS or SLA $1.10 62-16067

Trans. of #Zh[urnal] Obshchei Khimii (USSR) 1955, v. 25, p. 1680-1685.

DESCRIPTORS: Synthesis, *Chemical properties, *Bronze, *Niobium alloys, Lattices, *Oxides, Lithium, Calcium, Potassium, Stronium, Sodium, Barium

Nyobium bronzes of variable composition were obtained with the formulas Li_2NbO_3; $K_2Nb_2O_5$; $Na_4Nb_3O_8$; $CaNbO_3$; $SrNbO_3$ and $BaNbO_3$. The specific weight of the bronzes was determined picnometrically. The molecular magnetic moment of the bronzes was measured. It was shown that Stoner's formula is inapplicable for the transition elements of the higher periods. The specific electrical resistance of calcium-nyobium bronze was determined and found to be of the same order as metallic conductors. (Author)

Lorquet, J. C. and Vassart, S.
A STUDY OF SARIN AND ITS DEGRADATION PRODUCTS BY INFRARED SPECTROGRAPHY (Étude du Sarin et de ses Produits de Degradation par Spectrographie Infrarouge). 15 June 61 [9]p. 13 refs. JPRS: 9474.
Order from OTS or SLA $1.10 62-19449

Trans. of Soc[iété] Chim[ique de] Belg[ique]. Bull[etin] 1959, v. 68, p. 336-343.

DESCRIPTORS: *Phosphorus compounds, Fluorides, *Methyl radicals, Propyl radicals, *Infrared spectroscopy, Decomposition, Liquids, Solids, Gases, Chemical reactions, Cholinesterase, Inhibition.

A discussion of the characteristic group frequencies found in the infrared spectrum of pure sarin is followed by a study of the degradation products, when the substance is kept in steel containers. Two reactions are shown to occur, the first producing diisopropylmethylphosphonic ester, the second gaseous propylene. These reactions occur, though more slowly, at ordinary as well as higher temperatures. (Author)

Moraglio, G.
DETERMINATION OF THE MOLECULAR WEIGHT DISTRIBUTION FOR cis-TACTIC POLYBUTADIENE BY THE SEDIMENTATION RATE METHOD. Aug 62, 5100 words, 13 refs.
Order from CTS(Chem) $20.40 CTS(Chem)-282
subsequent copies $3.40/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 4, p. 352-359.

DESCRIPTORS: *Polymers, Pentadienes, *Molecular weight, Centrafuge separation, Sedimentation, Stereo chemistry, *Butadienes.

Nebbia, L. and Pagani, B.
QUANTITATIVE DETERMINATION OF THE ACTIVE ALUMINUM IN ALUMINUM ALKYLS BY MEANS OF TERTIARY BASES. Aug 62, 1350 words, 7 refs.
Order from CTS(Chem) $5.40 CTS(Chem)-283
subsequent copies $0.90/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44 no. 4, p. 383-384.

DESCRIPTORS: *Quantitative analysis, Electrolytic titration, *Metalorganic compounds, *Aluminum compounds, Alkyl radicals, *Pyridines.

Pasciak, J.
POLAROGRAPHIC DETERMINATION OF METHYL METHACRYLATE IN POLYMETHYL METHACRYLATE. [1962] [10]p. 13 refs.
Order from SLA $1.10 62-16008

Trans. of Chemia Analityczna (Poland) 1961, v. 6, p. 411-417.

DESCRIPTORS: *Polymers, *Acrylic resins, Methyl radicals, *Polarographic analysis, Acetones.

A new direct polarographic method, which is faster and more precise than the former ones, is described. 2 ml of a solution of 0.1 m $(C_4H_9)_4NI$ in dimethylformamide and then 1.0 ml of a 1.0% solution in acetone of the sample under investigation are introduced into the polarographic cell. Purified nitrogen is bubbled through the solution for 10 minutes in order to eliminate oxygen and subsequently polarographic recording is carried out by starting from a potential of -1.4 V. (with regard to the internal electrode). The control sample is studied in a similar way. The calculation of the amount of MM in PMM is carried out in the usual wav.

Pavlu, J. and Sula, J.
DETECTION AND ESTIMATION OF 3,4-BENZPYRINE AND ARSENIC IN CIGARETTE SMOKE. [1962] 8p. 26 refs.
Order from SLA $1.10 62-14779

Trans. of Cas[opis] Lek[aru] Ces[kych] (Czechoslovakia) 1960 [v. 99, no. 3/4] p. 101-104.

DESCRIPTORS: *Arsenic, *Hydrocarbons, *Tobacco, Cigarettes, *Smokes, Chromatographic analysis, *Benzopyrene.

A method of determining 3, 4-Benzpyrene in tobacco smoke by means of chromatography on acetylated paper and a method of arsenic determination based on absorption by a potassium hydroxide solution were investigated. These procedures proved to be simpler and to give more reproducable results than methods previously employed in the detection and measurement of carcinogenic agents in smoke.

Presting, W. and Jänicke, S.
APPLICATION OF ION-EXCHANGE METHODS IN WAX ANALYSIS. II. DETERMINATION OF THE NEUTRAL PART. Paper presented at the DGF-Meeting [held] in Hamburg, 24 Oct 60. [1962] 37p. (3 figs. omitted) 13 refs.
Order from SLA $3.60 62-10738

Trans. of Fette Seifen Anstrichmittel (West Germany) 1961, v. 63, no. 1, p. 49-55.

DESCRIPTORS: *Waxes, Soaps, Fatty acids, *Ion exchange, Separation, Chromatographic analysis.

The authors report on studies for the group-separation of waxes using ion-exchange methods. The neutral portions of natural and synthetic waxes are isolated and determined. Wax soaps and wax free fatty acids are separated by a mixed-bedexchange. The determination of the total, and particularly the high melting hydrocarbon-waxes of the unsaponifiable matter was successful, by using column chromatography in the liquid phase. The experimental possibilities for the separation of the total hydrocarbon waxes from wax mixtures are described. (Author)

Ryabchikov, D. I. and Lazarev, A. I.
SEPARATION OF RHENIUM FROM VANADIUM AND TUNGSTEN BY THE METHOD OF ION-EXCHANGE CHROMATOGRAPHY, tr. by J. B. 17 Apr 62, 19p. 7 refs.
Order from OTS or SLA $1.60 62-24524

Trans. of Akademiya Nauk SSSR. Komissiya po Analiticheskoi Khimii. Trudy, 1956, v. 7(10) p. 64-76.

DESCRIPTORS: Chromatographic analysis, Ion exchange resins, *Tungsten alloys, *Vanadium alloys, *Rhenium alloys, Separation.

Sorption of vanadium and tungsten by ionites (ion-exchanging substances) with various functional groups was studied at various acidities in the presence of complex-forming substances. Methods of chromatographic separation of pairs of metals: vanadium-

tungsten, rhenium-vanadium, rhenium-tungsten were worked out on the basis of preliminary tests. (Author)

Stashkov, N. V. and Zelyanskii, A. I.
THE POLAROGRAPHIC DETERMINATION OF GERMANIUM. [1962] 14p. 14 refs.
Order from OTS or SLA $1.60 62-16145

Trans. of Akad[emiya] Nauk SSSR. Sibirsk[oe] Otdel[enie]. Izv[estiya] 1959, no. 1, p. 59-66.

DESCRIPTORS: *Polarographic analysis, *Germanium, Mercury electrodes, Sodium compounds, Acetates, Borax.

The investigation of various inert electrolytes showed that tetravalent germanium is reduced from many solutions at the mercury-drop electrode, with formation of clearly shaped waves. The addition to the solutions of trilon B improves the form of the germanium wave. The applicability of the polarographic method of determination of germanium in a base of sodium acetate and borax to the analysis of practical samples is shown. (Author)

Terent'ev, A. P. and Terent'eva, E. A.
ADVANCES IN ORGANIC ELEMENTARY ANALYSIS. 19 Dec 61 [25]p. 170 refs.
Order from OTS or SLA $2.60 62-10695

Trans. of Khim[icheskaya] Nauka i Prom[yshlennost' (USSR) 1959, v. 4 [no. 2] p. 242-249.

DESCRIPTORS: Chemical analysis, *Organic compounds, *Chemical elements, Carbon, Hydrogen, Oxygen, Nitrogen, Sulfur, Halogens, *Chromic acid.

In the present review of methods of elementary organic analysis, it was not our task to cover exhaustively all variations of the different methods, but rather to note mainly those papers reporting principally new methods or significant improvements of existing methods. Particular attention was paid to the work of Soviet scientists, especially since reviews published in foreign journals report this work after a considerable delay. Frequently, serious distortions are also tolerated. This review contains no section on the analysis of organosilicaon compounds, since this subject was treated exhaustively by A. P. Kreshkov in the transactions of the conference on "The Chemistry and Practical Use of Organosilicon Compounds", held in Leningrad in September 1958. (Author)

Terent'ev, A. P. and Luskina, B. M.
ELEMENTAL ORGANIC ANALYSIS BY THE "WET COMBUSTION" METHOD, PT. 1. 27 Mar 62 [12]p. 9 refs.
Order from OTS or SLA $1.60 62-14972

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1959, v. 14, p. 112-117.

DESCRIPTORS: *Organic compounds, *Chemical analysis, Carbon, Halogens, Nitrogen, Combustion

A "wet combustion" method has been developed for the simultaneous determination of carbon, halogen, and nitrogen in organic compounds. A sample of the compound is heated at 150-160° with a mixture of concentrated sulfuric acid and a concentrated aqueous solution of chromic acid. The oxidation products are carried by a stream of oxygen through a heated (700-750°) quartz tube containing a catalyst: chromium sesquioxide on pumice. Carbon is oxidized to CO_2, which is absorbed by Ascarite and weighed. Halogen is liberated in the elemental form or as hydrogen halide, and is absorbed by an acetic acid solution of hydrazine hydrate and titrated argentimetrically by the Volhard method. Nitrogen is determined after combustion by distillation of ammonia from an alkaline solution. Iron, copper, silicon, and other elements that mineralize during the oxidation and remain in the sulfate solution can be determined simultaneously with carbon, halogen, and nitrogen. (Author)

Urbanski, Tadeusz S.
POTENTIOMETRIC TITRATION OF URANIUM IN MILLIGRAM AMOUNTS WITH VANADATE. 17 Feb 61 [7]p. 7 refs. JPRS: 6750.
Order from OTS or SLA $1.10 62-19456

Trans. of Chemia Analityczna (Poland) 1960, v. 5, no. 4, p. 687 - 689.

DESCRIPTORS: *Uranium, *Vanadates, Sodium compounds, Electrolytic titration

The method of potentiometric titration of U^{IV} with vanadate of sodium proves to be well repeatable and accurate and the speed of doing the determinations at room temperature is sufficiently large if, after reduction, H_3PO_4 is added to the specimens for acceleration of the reaction between V^V and U^{IV}. In the visual determinations, the potentiometric technique in the presence of H_3PO_4 does not essentially prolong the determinations, it eliminates the need for doing blank tests, and it does not require so high an acidity nor an increase in the temperature. (Author)

Yunoshev, V. K.
DEVELOPMENT OF OXIDATIVE PROCESSES DURING TOBACCO FERMENTATION. [1962] 12p.
Order from K-H $15.00 K-H 11411-j

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Pishchevaya Tekhnol[ogiya] (USSR) 1960, no. 5, p. 91-96.

DESCRIPTORS: Oxidation, *Tobacco, *Fermentation.

Inorganic Chemistry

Avdeeva, A. V. and Boreskov, G. K.
PREPARATION OF SULFUR FROM CONCENTRATED HYDROGEN SULFIDE. [1961] [2]p. 3 refs.
Order from OTS or SLA $1.10 62-10819

[Condensed] trans. of Khimicheskaya Promyshlennost' (USSR) 1945, no. 4, p. 1-3.

DESCRIPTORS: *Sulfur, Dioxides, Hydrogen compounds, Sulfides

Kirsanov, A. V.
THE CHLORIDE OF ISOCYANATOPHOSPHORIC ACID. [1962] 6p.
Order from ATS $8.50 ATS-25P61R

Trans. of #Zhur[nal] Obshchei Khim[ii] (USSR) 1954, v. 24, no. 6, p. 1033-1038.

DESCRIPTORS: *Chlorides, *Isocyanates, *Phosphoric acids, Acids, Complex compounds, Cyanates

Lesser, R. and Erben, E.
PURIFICATION OF SILICON THROUGH TRANSPORT REACTIONS (Über die Reinigung von Silicium durch Transportreaktionen). 18 Sep 61 [11]p. 6 refs.
JPRS: 10148.
Order from OTS or SLA $1.60 61-31608

Trans. of Zeitschrift für Anorganische Chemie (East Germany) [1961] v. 309, no. 5/6, p. 297-303.

DESCRIPTORS: *Silicon, Purification, Chemical reactions, Transport properties, Quantitative analysis.

The purification of silicon by the transport reactions studied in greater detail by H. Schaefer was studied by quantitative-analytical methods. A sometimes considerable diminution of the impurity quantities could be established. An apparatus is described with which the purification of silicon can be accomplished in a simple procedure. In this process, the silicon powder is treated with iodine vapor at a certain pressure at 1150° C in a turbulence layer. (Author)

Perel'man, F. M.
EXPERIMENTAL PREDICTION OF THE APPROXIMATE MELTING POINTS OF CERTAIN ALLOYS BELONGING TO THE SYSTEM Ni-Ti-Cr-Mo-W-Nb. 16 July 62 [18]p. 14 refs. JPRS: 14484.
Order from OTS or SLA $1.60 62-25979

Trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1962, v. 7, no. 4, p. 844-849.

DESCRIPTORS: *Nickel alloys, *Titanium alloys, *Chromium alloys, *Molybdenum alloys, *Tungsten alloys, *Niobium alloys, Melting.

On the basis of literature data on binary and some ternary systems forming a part of the six-component system Ni-Ti-Cr-Mo-W-Nb, tentative fusibility diagrams were plotted for six-component alloys, enriched with nickel or titanium, by the method of optimum projections. According to these diagrams, approximate (tentative) melting points of four alloys of this system were determined: two that were enriched with nickel, and two enriched with titanium. Both nickel alloys were studied experimentally. For the alloy containing 65% Ni, 15% Cr, 25% Mo, 5% Ti, 7% W and 3% Nb, the prediction gave a melting point of 1360°; the experimental check gave 1356°. For the alloy containing 70% Ni, 10% Cr, 5% Mo, 5% Ti, 7% W and 3% Nb, the prediction gave a melting point of 1376°; the experimental check gave 1350°. (Author)

Pflugmacher, A. and Dahmen, H.
ON THE FORMATION OF SILICON-NITROGEN COMPOUNDS IN THE GLOW DISCHARGE: TRIS-TRICHLOROSILYLAMINE $(SiCl_3)_3N$. [1962] 6p. (4 figs. omitted) 7 refs.
Order from SLA $1.10 62-14028

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1957, v. 290, p. 184-190.

DESCRIPTORS: *Glow discharges, *Silicon compounds, *Nitrogen compounds, Production

By the reaction of $SiCl_4$ and N_2 in the glow discharge $(SiCl_3)_3N$ is formed as a crystalline substance in the presence of a series of oily and resinous products. It occurs in two polymorphic modifications of which the stable has a f.p. of 98° and the unstable of 44°C. Through condensation by elimination of $SiCl_4$ from $(SiCl_3)_3N$ two series of compounds result, one of which possesses a cyclic structure and crystalline nature and the other, by contrast, a chainlike linkage and oily character. If one allows $SiCl_4$ vapor and N_2 to stream through a glow discharge apparatus in the cooled reaction vessel there is formed a series of compounds of both crystalline and resinous nature. These compounds are, collectively, made up of Si, N and Cl. Their separation from chlorine formed simultaneously and excess $SiCl_4$ was accomplished by simple evaporation of the latter at room temperature in vacuum. The isolation of the separate products of the mixture of substances proved most difficult in view of their slightly different melting points and boiling points. (Author)

Organic Chemistry

[BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIVISION OF TECHNICAL SCIENCE] 1942, NO. 10: [TABLE OF CONTENTS AND SELECTED ABSTRACTS IN THE FIELD OF PETROLEUM LITERATURE]. [1962] 2p.
Order from OTS or SLA $1.10 62-14622

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1942, no. 10, p. 11-25.
##A complete trans. is available from OTS or SLA $1.60 as 61-16976 [1961] 14p.

DESCRIPTORS: *Hydrocarbons, Decomposition, Oxidation, Vapors.

Contents:
##Materials on the chemistry of oxidizing cracking of hydrocarbons in the vapor phase, I. by S. S. Nametkin and L. M. Rozenberg.

PROCESS FOR PREPARING OXYGENATED COMPOUNDS BY DIRECT CATALYTIC OXIDATION OF LOWER OLEFINS. Aug 62, 3600 words.
Order from CTS(Chem) $14.40 CTS(Chem)-285
subsequent copies $2.40/ea.

Trans. of Belgian patent 605 502, by Edison Co., 28 June 61, pat. appl. filed, Italy, 1 July 60 and 23 Nov 60.

DESCRIPTORS: *Hydrocarbons, *Ethylenes, Oxidation, *Carbonyl radicals, Acetaldehyde, Acetones, *Carboxylic acids, Acetic acids, *Catalysts, Metals, Oxides, Acids.

PROCESS FOR THE TREATMENT OF CELLULOSIC MATERIALS FOR THE PURPOSE OF INHIBITING THE PYROFORMATION OF POLYCONDENSED HYDROCARBONS. Feb 61, 4p.
Order from K-H $5.00 K-H 10704

Trans. of French patent 1, 180, 320 [pub. 1959].

DESCRIPTORS: Cellulose chemistry, *Inhibition, *Hydrocarbons, *Combustion.

SOVIET RESEARCH ON ORGANO-PHOSPHORUS COMPOUNDS 1949-56. Chemistry Collection Series, Pt. 1: Derivatives of Organic Phosphorus Acids Containing the C-O-P Linkage. -; Derivatives of Organic Phosphorus Acids Containing the C-O-P-S or C-S-P Linkages. -; Effects of Inorganic Phosphorus compounds on Organic Compounds or Reactions. 1961, 1v.
Order from CB

DESCRIPTORS: Organic compounds, *Phosphoric acids, *Phosphorus compounds.

SOVIET RESEARCH ON ORGANO-PHOSPHORUS COMPOUNDS 1949-56. Chemistry Collection Series, Pt. 2: Derivatives of Organic Acids of Phosphorus Containing the C-P-O- Bond. -; Derivatives of Organic Phosphorus Acids Containing the C-P-S Bond. 1961, 1v.
Order from CB

DESCRIPTORS: Organic compounds, Organic acids, *Phosphoric acids, *Phosphorus compounds.

SOVIET RESEARCH ON ORGANO-PHOSPHORUS COMPOUNDS 1949-56. Chemistry Collection Series, Pt. 3: Inorganic Complexes of Organic Compounds of Phosphorus. -Phosphines, Phosphine Oxides, Phosphonium Compounds and Their Selenium, Nitrogen, Sulfur and Halogen Derivatives. - Nitrogen-containing Derivatives of Organic Phosphorus Compounds. 1961, 1v.
Order from CB

DESCRIPTORS: Organic compounds, *Phosphorus compounds, *Phosphines, *Phosphine oxides, *Phosphonium radicals, Selenium compounds, *Nitrogen compounds, Sulfur compounds, Halogen compounds.

Abramov, V. S.
INTERACTION OF CYCLONES WITH COMPOUNDS CONTAINING THE VINYL RADICAL. [1962] [2]p. 5 refs.
Order from OTS or SLA $1.10 62-14143

[Condensed] trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1945, no. 4, p. 330-338

DESCRIPTORS: *Vinyl radicals, Chemical reactions, Cyclones, Cyclopentanones.

Beyer, H., Melde, S., and Dittrich, K.
HYDRAZINE DERIVATIVES OF THIOPHENE AND OXAZOLE. 9 Dec 61 [5]p. JPRS: 11441.
Order from OTS or SLA $1.10 62-19745

Trans. of Zeitschrift für Chemie (East Germany) 1961, v. 1, no. 6, p. 191.

DESCRIPTORS: *Hydrazine derivatives, *Thiophenes, Azoles, Chlorine compounds.

Blom, Jakob.
A CONTRIBUTION TO OUR KNOWLEDGE OF THE CONFIGURATION AND CONFORMATION OF ANOMERIC ALDOSES AND THEIR GLYCOSIDES (Ein Beitrag zur Kenntnis derKonfiguration und der Konformation Anomerer Aldosen und Deren Glykoside) tr. by D. A. Sinclair. 1962, 14p. 21 refs. NRCC Technical trans. 1029.
Order from NRCC $1.00 NRCC C-4003

Trans. of Acta Chemica Scandinavica (Denmark) 1961, v. 15, p. 1667-1675.

DESCRIPTORS: *Aldoses, *Saccharides, Decomposition, *Glycosides, Hydrolysis, Furan derivatives, Carbohydrates

Braconier, F. F. A. and Bihan, H. Le.
PREPARATION OF VINYL CHLORIDE: DESCRIPTIVE MEMORANDUM. [1961] 13p.
Order from SLA $1.60 62-10613

Trans. of mono. descriptive memorandum filed in support of an application for a patent by Société Belge de l'Azote et des Produits Chimiques du Marly (Priority: British application from 18 Dec 59).

DESCRIPTORS: *Vinyl chlorides, Synthesis, Acetylenes, Ethylenes, Hydrocarbons, Pyrolysis, Plastics.

Choporov, Ya. P.
OXIDATIVE CHLORINATION OF ALIPHATIC HYDROCARBONS AND OXIDATION OF HYDROGEN CHLORIDE (Okislitelnoe Khlorirovanie Alifaticheskikh Uglevodorodov i Okislenie Khloristogo Vodoroda). [1961] 12p. 65 refs.
Order from OTS or SLA $1.60 62-10722

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1958 [no. 2] p. 80-84.

DESCRIPTORS: *Hydrocarbons, Ethylenes, *Hydrochloric acid, Oxidation, *Chlorination, Bibliography.

The oxidative chlorination reaction of aliphatic hydrocarbons is only possible at high temperatures where the inhibiting effect of oxygen is removed and the necessary rate of the bimolecular reaction is attained. The high temperature itself causes a significant oxidation of the hydrocarbon to be chlorinated; this gives

rise to almost unsurmountable difficulties for the practical use of this process. The chlorination of hydrocarbons with fused cupric chloride and in a boiling layer of the contact mass is not practical due to the cumbersome nature of these processes. The practical value of the oxidative chlorination of ethylene in order to obtain unsaturated chlorine derivatives of ethylene (dichloroethylenes, tri- and tetra-chloroethylene) is quite doubtful, since all these products are much more profitably obtained from acetylene; the prospects of producing acetylene by pyrolysis of hydrocarbon gases are tremendous. Oxidation of hydrogen chloride over a moving granulated contact mass containing ferric oxide and resulting in the formation of elementary chlorine seems to be a more promising method for solving the problems of recovering chlorine from hydrogen chloride. Such a method can form the basis of an industrial process for recovering chlorine from hydrogen chloride. The recovery of chlorine from hydrogen chloride opens a wide field for the development of the production of chlororganic products and above all methane chlorides. (Author)

Coll, Alberto Palomo and Iglesias, Manuel Adroer.
IMPROVEMENTS IN THE PREPARATION OF HYDRAZINE AND ITS SALTS. [1962] 3p. 8 refs.
Order from OTS or SLA $1.10 62-14897

Trans. of Span[ish] patent 255,065, 18 Jan 60.

DESCRIPTORS: *Hydrazines, Sodium compounds, Chlorine compounds, Hydroxides, Processing, *Manufacturing methods

Chlorine gas is passed into an aqueous solution of urea at 5-15°C containing some inorganic salt, e.g. Na_2CO_3 to keep the pH between 6 and 14. The solution of chloro urea is poured continuously at 10-20°C in a 30-48% aqueous solution of NaOH, in a ratio of 4 moles of NaOH per mole of NaOH, so that the heat developed in the reaction rapidly heats up the reaction mixture, which makes external heating superfluous. The basic effect of NaOH can also be obtained with KOH, and strong organic bases, such as trimethylamine and tertiary alkyl or aralkyl amines, or combinations of organic and inorganic bases. Volatile organic bases such as trimethylamine can be recycled into the process in a continuous or a discontinuous fashion. (Extracted)

Crespi, G., Flisi, U., and Arcozzi, A.
STUDIES ON THE RATE OF CRYSTALLIZATION OF cis-1, 4-POLYBUTADIENE. Aug 62, 2050 words, 9 refs.
Order from CTS(Chem) $8.20 CTS(Chem)-299
subsequent copies $1.35/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 6, p. 627-630.

DESCRIPTORS: Synthetic rubber, *Polymers, *Butadienes, *Crystallization, Chemical bonds, Vulcanization

Danusso, Ferdinando and Sianesi, Dario.
ON THE MECHANISM OF STEREOSPECIFIC POLYMERIZATION AND COPOLYMERIZATION OF AROMATIC VINYL MONOMERS. I. EXPERIMENTAL RESULTS. Aug 62, 6500 words, 29 refs.
Order from CTS(Chem) $26.00 CTS(Chem)-293
subsequent copies $4.25/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 5, p. 474-482.

DESCRIPTORS: *Polymerization, *Vinyl radicals, *Styrenes, Stereochemistry, Reaction kinetics, Catalysts, Titanium compounds, Chlorides, Aluminum compounds, Hydrocarbons, Copolymerization.

Danusso, Ferdinando.
ON THE MECHANISM OF STEREOSPECIFIC POLYMERIZATION AND COPOLYMERIZATION OF AROMATIC VINYL MONOMERS. II. POSTULATION OF THE KINETIC AND CHEMICAL MECHANISM. Aug 62, 7900 words, 35 refs.
Order from CTS(Chem) $31.60 CTS(Chem)-297
subsequent copies $5.25/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 6, p. 611-620.

DESCRIPTORS: *Polymerization, *Vinyl radicals, *Styrenes, Stereochemistry, *Reaction kinetics, Ions, Catalysts, Titanium compounds, Chlorides, Aluminum compounds, Hydrocarbons, Copolymerization.

See also CTS(Chem)-293

Farberov, M. I., Kut'in, A. M. and others.
STUDY ON THE SYNTHESIS CONDITIONS OF THE 2-METHYL-5-PYRIDINE (M.V.P.)[1962]11p. 15 refs.
Order from OTS or SLA $1.60 62-16118

Trans. of #Zhur[nal] Priklad[noi] Khimii (USSR) 1961, v. 34 [no. 3] p. 632-640.

DESCRIPTORS: *Methyl radicals, *Vinyl radicals, *Pyridines, Polymers, Synthesis

A study of dehydrogenation reaction of 2-methyl-5-ethylpyridine has permitted choosing of conditions, securing a 2-methyl-5-vinylpyridine yield until 25% to the passed and 70-73% to the decomposed MEP. Steam in the MEP dehydrogenation reaction is incompletely inert as diluent, since it is provoking a partial hydrolysis of pyridine bases. Investigation on various substances as inhibitors of MVP polymerization permits storage security of MVP, and also its separation from the dehydrogenation products. (Author)

Fritz, G.
FORMATION, PROPERTIES AND REACTIONS OF THE SILYLPHOSPHINE. [1962] 1p.
Order from SLA $1.10 62-16641

Abstract trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (East Germany) 1955, v. 280, no. 5/6, p. 332-345.

DESCRIPTORS: *Silicon compounds, *Phosphines, Synthesis, Chemical properties, Chemical reactions

Gavlin, G., Hedman, E. A., and Hubbard, B. W., Jr.
POLYMERIZATION OF INTERNAL OLEFINS.
Aug 62, 4400 words.
Order from CTS(Chem) $17.60 CTS(Chem)-290
subsequent copies $2.90/ea.

Trans. of Belgian patent 606,644, by The Richardson Co., 27 July 61 (U.S. pat. appl. 27 July 60).

DESCRIPTORS: *Polymerization, *Elastomers, *Ethylenes, Butadienes, *Catalysts, *Metalorganic compounds, Alkali metals.

Gefter, E. L., Rubtsova, I. K., and Shner, S. M.
METHOD FOR PREPARING ORGANOPHOSPHORUS POLYESTERS. [1962] 3p.
Order from OTS or SLA $1.10 62-14986

Trans. of USSR patent 134,872, cl. 39c, 30 (1961).

DESCRIPTORS: *Polymers, *Plastics, *Esters, *Phosphonic acids, Phosphorus compounds, Halogen compounds.

The method is characterized in that, in order to obtain products with increased thermal stability, diaryl alkylphosphonates are condensed with dihalohydrocarbons in the presence of $SnCl_4$, and the product obtained is hardened by heating to 200°.

Giannini, U. and Cesca, S.
VINYL CHLORIDE POLYMERS OBTAINED WITH CATALYSTS PREPARED FROM ALUMINUM ALKYLS AND VANADIUM COMPOUNDS. Aug 62, 4100 words, 23 refs.
Order from CTS(Chem) $16.40 CTS(Chem)288
subsequent copies $2.70/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44 [no. 4] p. 371-378.

DESCRIPTORS: *Polymers, *Vinyl chlorides, Acetates, Catalysts, Metalorganic compounds, *Aluminum compounds, *Vanadium compounds, Alkyl radicals, Chlorides.

Ginsburg, V. A. and Yakubovich, A. Ya.
PREPARATION, PYROLYSIS, AND PHOTOLYSIS OF POLYFLUORINATED ALIPHATIC AZO COMPOUNDS.
22 Mar 62 [8]p. 6 refs.
Order from OTS or SLA $1.10 62-14992

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142, [no. 1] p. 88-91.

DESCRIPTORS: *Polymers, *Azo compounds, Fluorination, Synthesis, Pyrolysis, Photolysis

Glushkova, M. A. and Evteeva, M. M.
THE TANTALUM ANALOG OF PHOSPHONITRILE CHLORIDE. [1962] 6p. 12 refs.
Order from OTS or SLA $1.10 62-16174

Trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1961, v. 6, no. 1, p. 18-20.

DESCRIPTORS: *Tantalum compounds, *Nitriles, Chlorides, *Phosphonitrile chlorides, Preparation

Described is the method of preparation of the compound $TaNCl_2$ (tantalumnitrile chloride) which is an analog of the $PNCl_2$. The experimental data are presented which show that $TaNCl_2$ is truly one compound. Some properties of the $TaNCl_2$ are mentioned. (Author)

Gritsenko, T. M., Yakubovich, V. S., and Kart Kartsovnik, B. I.
POLYMERIZATION OF ACRYLONITRILE IN THE PRESENCE OF A ZIEGLER CATALYST. [1961] [3]p. 3 refs.
Order from OTS or SLA $1.10 62-13987

Trans. from Vysokomolekulyarnye Soedineniya (USSR) 1960, v. 2, no. 7.

DESCRIPTORS: *Polymerization, *Acrylonitriles, Catalysts.

A polymer was obtained by polymerizing acrylonitrile on a Ziegler catalyst. Endeavors involved a diminution of the monomer's sorption on the catalyst by introducing into the system additives that compete with the monomer. Acetonitrile was selected as an additive of this sort. The experiments were performed at 20° C in an atmosphere of an anhydrous inert gas. The composition of the reaction mixture in one of the experiments was 25 grams of n-octane as the medium; 12 grams of acrylonitrile; 0.05 gram of acetonitrile; and a mixture of titanium tetrachloride and tributylaluminum in a molar ratio of 1 : 1 and amounting to 1% by weight of the reaction mixture. The polymer yield totaled 6% after 25 hours. The elementary composition of the polyacrylonitrile was close to the theoretical. The solution of the polymer in dimethylformamide had an intrinsic viscosity of 0.3 at 25° C.

Inoue, Goro.
SYNTHESIS OF 3,5-DIACETYLPYRIDINE. Rept. no. 4 of [The Chemistry of] Methyl-β-Chlorovinylketone. [1962] 6p.(formulae omitted) 10 refs.
Order from SLA $1.10 62-10954

Trans. of [Nihon] Kagaku Zasshi (Japan) 1961, v. 82, no. 9, p. 1272-1274.

DESCRIPTORS: Synthesis, *Acetyl radicals, *Pyridines, Methyl radicals, Vinyl chlorides, *Ketones.

By a reaction of methyl-β-aminovinylketone and formaldehyde (obtained by the condensation of methyl- -chlorovinylketone and ammonia), 1, 4-dihydro-3, 5-diacetylpyridine was obtained. By oxidizing this compound 3, 5-diacetylprridine was synthesized. By using acetaldehyde or benzaldehyde instead of formaldehyde, 4-methyl-, 4-phenyl--3, 5-diacetylpyridine were synthesized by the same reaction. (Author) (See also 60-14243)

Kahanek, Herbert, Franke, Walter, and Sturzenhofecker, Franz.
PROCESS FOR PRODUCING SYNTHETIC RUBBERS.
Aug 62, 1200 words.
Order from CTS $4.80 CTS(Chem)-300
subsequent copies $0.80/ea

Trans. of (West) German patent appl. 1 121 812 (C 19912 IVd/39c) cl. 39c 25/05. internat. cl. C 08d, by Chemische Werke Huels A.G., filed 3 Oct 59, announced and text laid open for inspection 11 Jan 62.

DESCRIPTORS: Synthetic rubber, *Butadienes, Production, Colloids, *Sodium compounds, *Capric acids, Fluorides.

Kalabina, A. V., Melekhov, V. V. and others.
THE ADDITION OF ETHYL MERCAPTAN TO CERTAIN VINYL ESTERS OF CHLOROPHENOLS [AND] THE SCIENTIFIC CONFERENCE OF YOUNG SCIENTISTS OF THE INSTITUTE OF EXPERIMENTAL BIOLOGY AND MEDICINE OF THE SIBERIAN DIVISION OF THE ACADEMY OF SCIENCES USSR (NO. 1) DEC 61. 20 July 62 [17]p. 7 refs. JPRS: 14532.
Order from OTS or SLA $1.60 62-25967

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 1, p. 97-101 and 111-113.

DESCRIPTORS: *Thiols, *Ethyl radicals, *Vinyl radicals, Esters, *Phenols, Scientific personnel, Conferences, Chlorides

We carried out addition reactions of ethyl mercaptan to the vinyl esters 2-chloro-, 4-chloro-, and 2,4-dichlorophenols, using both ionic and free-radical mechanisms. We obtained and described three complete aliphatic-aromatic esters of monothioethylene glycol and two assymetric aliphatic-aromatic thioacetals of acetaldehyde, which have not hitherto been described in the literature. We tested the acaricidal and insecticidal properties of these compounds. (Kalabina et al.) From 6 December through 8 December 1961 in the conference hall of the Siberian Division of the Academy of Sciences USSR, the first scientific conference of young scientists of the Institute of Experimental Biology and medicine of the Siberian Division of the Academy of Sciences USSR was held. The conference showed that the young scientists in the Institute of Experimental Biology and Medicine consist of a large number of active, promising scientific workers who tomorrow will themselves educate the scientific cadres and man the most advanced fronts of Soviet science—in the Siberian Division of the Academy of Sciences USSR. (Melekhov et al.)

Kargin, V. A. and Kozlov, P. V.
THE MATERIAL-TECHNICAL BASE OF COMMUNISM AND THE SCIENCE OF POLYMERS. 20 June 62 [12]p. JPRS: 14238.
Order from OTS or SLA $1.60 62-25477

Trans. of Nauchnye Doklady Vysshei Shkoly. Filosofskie Nauki (USSR) 1962, no. 2, p. 33-41.

DESCRIPTORS: *Communism, Scientific research, *Polymers

Khmelevskii, V. I. and Postovskii, I. Ya.
METHODS OF INVESTIGATION AND ANALYSIS OF COMPOUNDS PRESENT IN CRUDE ANTHRACENE AND OTHER HIGH BOILING FRACTIONS OF COAL TAR. [Rept. 10 on Polycyclic Hydrocarbons]. [1962] 3p. 16 refs.
Order from OTS or SLA $1.10 62-14156

[Condensed] trans. of Zhurnal Prikladnoi Khimii (USSR) 1944, v. 17, no. 7/8, p. 463-470.
Complete translations are available from OTS or SLA $1.60 as 61-20929 [1961] 13p. and from OTS or ETC $1.85 as 61-17769, MTWL-85, 13p. (text in Dutch).

DESCRIPTORS: Hydrocarbons, *Anthracenes, *Coal tar, Boiling, Fractionation.

Kitayama, H. and Osawa, Y.
FOAMING ABILITY OF POLYETHYLENE COMPOUNDED WITH CELOGEN, A SULFONYL HYDRAZIDE BLOWING AGENT. Pt. 1 of Studies of Cellular Polyethylene. [1962] 14p.
Order from ATS $20.75 ATS-51P61J

Trans. of Nihon Gomu Kyokaishi (Japan) 1959, v. 32, no. 7, p. 518-527.

DESCRIPTORS: *Rubber, Foams, *Polymers, *Ethylenes, Sulfonyl radicals, Hydrazines, Expanded plastics

Lagache, Michel, Chateau, Marcel, and Pomey Jacques.
GRAFTING-CROSSLINKING OF ALLYL CELLULOSE WITH VINYL MONOMERS (Greffage-Pontage de l'Allylcellulose par les Monomères Vinyliques). [1962] [6]p. 2 refs.
Order from SLA $1.10 62-14315

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1960, v. 251, no. 22, p. 2353-2355 (pub. by Gauthier Villars et Cie., Paris).

DESCRIPTORS: *Vinyl radicals, *Allyl radicals, *Cellulose, Chemical bonds, Fibers.

The special properties of allyl cellulose are associated either with the double bond or the reactivity of the methylene group between the ether oxide group and the double bond. Especially, the latter group can be activated by ultraviolet light and initiates the grafting of vinyl monomers. (Author)

Longiave, C. Castelli, R., and Ferraris, M.
CHAIN TRANSFER AGENTS IN THE POLYMERIZATION OF BUTADIENE WITH COBALT CATALYSTS. Aug 62, 2400 words, 12 refs.
Order from CTS(Chem) $9.60 CTS(Chem)-302
subsequent copies $1.60/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 7, p. 725-729.

DESCRIPTORS: *Butadienes, *Polymerization, *Cobalt catalysts, Hydrogen, Ethylenes, Chemical bonds, Molecular structure, Stereochemistry, Infrared spectroscopy, Alkyl radicals, Aluminum compounds, Halides, Metalorganic compounds.

Martin, H. and Vohwinkel, F.
AROMATIC COMPLEXES WITH TITANIUM-ALUMINUM CHLORIDE. [1962] 27p. 24 refs.
Order from SLA $2.60 62-14298

Trans. of Chemische Berichte (West Germany) 1961, v. 94, no. 9, p. 2416-2419.

DESCRIPTORS: *Chlorides, *Aluminum compounds, *Titanium compounds, Oxidation, Polymerization, Complex compounds, Pyrolysis.

Mikhailov, B. M. and Bubnov, Yu. N.
INTERNALLY COMPLEXED ACETYLACETONATES OF DIALKYLBORINIC ACIDS. [1961] 4p.
Order from ATS $6.65 ATS-76N53R

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1960, no. 10, p. 1883-1885.

DESCRIPTORS: *Acetones, *Acetyl radicals, Complex compounds, Boric acids, Alkyl radicals.

Nametkin, S. S. and Obtemperanskaya, S. I.
PHENYLFENCHOCYCLENE AND SOME OF ITS DERIVATIVES. [1961] 3p. 3 refs.
Order from OTS or SLA $1.10 61-18342

Trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1945, v. 49, p. 191-193.

DESCRIPTORS: *Alcohols, *Fenchyl radicals, *Phenyl radicals, Dehydration, Camphors, Ketones, Quinones, Carboxylic acids, Hydrocarbons.

The nature of the product of dehydration of tertiary phenylfenchyl alcohol was identified as phenylcyclofenchene. Hydration of phenylcyclofenchene was achieved successfully by the action of trichloroacetic acid with subsequent hydrolysis of the ester. Several representatives of a new series of phenylated homologs of the camphor group have been obtained: a secondary alcohol, a ketone, a quinone, a dicarboxylic acid. (Author)

Natta, G., Corradini, P. and others.
ASSIGNMENT OF AN erythro-ISOTACTIC STRUCTURE TO ALTERNATING CRYSTALLINE ETHYLENE-cis-2-BUTENE AND ETHYLENE-CYCLOPENTENE COPOLYMERS. Aug 62, 700 words, 6 refs.
Order from CTS(Chem) $2.80 CTS(Chem)-296
subsequent copies $0.45/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 5, p. 532-533.

DESCRIPTORS: *Polymers, Molecular association, Crystal structure, *Ethylenes, *Butenes, *Cyclopentenes, Molecular structure.

Natta, G., Pasquon, I. and others.
KINETICS OF THE POLYMERIZATION OF PROPYLENE WITH HETEROGENEOUS CATALYSTS OF HIGH STEREO-SPECIFICITY. VII. STUDY OF THE POLYMER CHAIN INITIATION STEPS. Aug 62, 3000 words 15 refs.
Order from CTS(Chem) $12.00 CTS(Chem)-298
subsequent copies $2.00/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44 no. 6, p. 621-626.

DESCRIPTORS: *Polymerization, *Propenes, *Reaction kinetics, Chemical bonds, Catalysts, Aluminum compounds, Hydrocarbons, Titanium compounds, Chlorides, Chain reactions.

Natta, G., Pino, P. and others
SYNTHESIS AND CHARACTERISTICS OF NEW POLYMERS OF THE ALPHA OLEFINS WITH EXCEPTIONALLY REGULAR STRUCTURE. [1961] [7]p.
Order from SLA $1.10 62-14034

Trans. of mono. (paper) from World Petroleum Congress (no. 4) [Rome, 1955]. Proceedings, sect. IV/C.

DESCRIPTORS: *Polymers, *Ethylenes, *Petroleum, Synthesis, Crystals, Mechanical properties.

Topics discussed include (1) generalities of the polymers of alpha olefins, (2) synthesis and characteristics of crystalline polymers of alpha olefins, and (3) mechanical properties of isotaxic polymers.

Neiman, M. B., Kuz'minskii, A. S., and Angert, L. G.
SCIENTIFIC PROBLEMS IN THE STABILIZATION OF POLYMERS (Nauchnye Zadachi Stabilizatsii Polimerov) tr. by V. Burdon. 26 Oct 61 [20]p. 5 refs. Trafford Park trans. no. 3033; NLL M. 3595.
Order from OTS or SLA $1.60 62-24668

Trans. of Akad[emiya] Nauk SSSR. Vestnik, 1960, v. 30, no. 11, p. 36-50.
Other translations are available from OTS $3.50 in 61-21528, JPRS-4506, 3 Apr 61, 231p. and from ATS $27.80 as ATS-39N53R [1961] 14p.

DESCRIPTORS: *Polymers, Stabilization.

Oda, L. H. and Tsuruta, Y. Z.
ACTIVATION OF ALKYL RADICALS BY NITRO RADICALS, PT. II. [1960] 4p.
Order from SLA $1.10 60-18127

Trans. of [Kyoto Daigaku Kagaku Kenkyusho Hokoku] (Japan) 1947, v. 16, p. 6-8.

DESCRIPTORS: *Alkyl radicals, *Nitro radicals, Oxidizers, Resonance.

Pampus, Gottfried, Gröne, Heinz and others
PROCESS FOR THE PREPARATION OF POLYISOPRENE. Aug 62, 3800 words.
Order from CTS(Chem) $15.20 CTS(Chem)-301
subsequent copies $2.50/ea.

Trans. of Belgian patent 608, 803, by Farbenfabriken Bayer A.G., 4 Oct 61 (internat. convention: pat appl. German Federal Republic no. F 32 284 IVb/39c, filed 6 Oct 60, and no. F 32 810 IVb/39c filed 21 Dec 60).

DESCRIPTORS: Synthetic rubber, *Polymers, *Isoprene, Preparation, Catalysts, *Metalorganic compounds, Lithium compounds, Aluminum compounds, Alkyl radicals, Titanium compounds, Halides.

Parizek, R. and Moucka, V.
AZO DYES DERIVED FROM LUMINOL. 7 Dec 61 [6]p. 9 refs.
Order from SLA $1.10 62-10691

Trans. of Chem[icky] Prumysl (Czechoslovakia) 1957, v. 7[32] p. 651-652.

DESCRIPTORS: *Dyes, *Azo compounds, Amino compounds, Hydrazines

Some monoazo dyes derived from 5-aminophthalhydrazide (Luminol) were prepared in the laboratory; their properties and some exploratory experiments investigating the possibility of their practical applications are described. (Author)

Pasek, J. and Charuzova, L.
FORMATION OF METHYLAL IN THE PRODUCTION OF FORMALDEHYDE. [1962] 5p.
Order from ATS $7.75 ATS-72P61C

Trans. of Chem[icky] Prumysl (Czechoslovakia) 1958, v. 8(33) no. 9, p. 455-457.

DESCRIPTORS: *Methylal, *Formaldehyde, Production

Ruggieri, P. de, Ferrari, C., and Gandolfi, C.
STEROIDS. VIII. THE SCHMIDT REACTION ON 20-KETOSTEROIDS. 1 Sep 61 [2]p.
Order from SLA $1.10 62-14910

Partial trans. of Gazz[etta] Chim[ica] Ital[iana] 1961, v. 91 [no. 6/7] p. 655-664.

DESCRIPTORS: *Steroids, Chemical reactions, *Acetamides, Anhydrides, *Ammonia, *Sulfuric acid, Hydrogen compounds, Azides

The Schmidt reaction of hydrazoic acid with 20-ketosteroids is described. Many new 17-acetamido and 17-alkylacetamido steroids are prepared. (Author)

Schenker, E.
RECENT METHODS OF PREPARATIVE ORGANIC CHEMISTRY. IV. APPLICATION OF COMPLEX BOROHYDRIDES AND OF DIBORANE IN ORGANIC CHEMISTRY. [1962] [84]p. 865 refs.
Order from SLA $8.10 62-16363

Trans. of Angewandte Chemie (West Germany) 1961, v. 73, no. 3, p. 81-107.

DESCRIPTORS: Chemistry, Organic compounds, Synthesis, Reduction, *Complex compounds, *Borohydrides, Hydrides, *Diboranes.

Seel, F., Ballreich, K., and Peters, W.
PREPARATION OF INORGANIC FLUORINE COMPOUNDS BY MEANS OF BENZOYL FLUORIDE (AND BENZENE SULFONYL FLUORIDE). [1962] 3p. 5 refs.
Order from SLA $1.10 62-16579

Partial trans. (extracts from p. 2120-2122) of Chem[ische] Ber[ichte] (West Germany) 1959, v. 92, p. 2117-[2122].

DESCRIPTORS: Fluorination, *Flourine compounds, *Benzenes, Benzoyl radicals, *Sulfonyl radicals.

Sheverdina, N. I., Paleeva, I. E. and others.
NEW ORGANOCADMIUM COMPOUNDS OF THE Ar_2Cd CLASS AND THEIR DIOXANATES. [1962] 4p.
Order from ATS $7.25 ATS-17P62R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 143, no. 5, p. 1123-1126.

DESCRIPTORS: *Cadmium compounds, Arsenic compounds, Dioxides, Organic compounds.

Shima, K. and Tsutsumi, S.
PHOTOCHEMICAL REACTION OF METHYL FORMATE IN CYCLOHEXANE. Pt. 3 of Studies of Photochemical Reactions. [1962] 5p.
Order from ATS $6.50 ATS-85P61J

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 11, p. 1945-1948.

DESCRIPTORS: *Photochemical reactions, Methyl radicals, *Formates, *Cyclohexanes.

Short, James Newton.
COPOLYMER OF UNORDERED DISTRIBUTION WITH LOW CONTENTS OF VINYL GROUPS AND TRANS GROUPS. Aug 62, 4200 words.
Order from CTS(Chem) $16.80 CTS(Chem)-289
subsequent copies $2.80/ea.

Trans. of French patent 1 278 818, internatl. cl. B 01 j -C 08 d, appl. no. 846 674, by Phillips Petroleum Co. (U. S. A.) appl. filed 12 Dec 60, granted by decree of 6 Nov 61 (pat. appl. filed U. S. A. 31 Dec 59 under no. 863 076, in the name of applicant). (Bulletin Officiel de la Propriété Industrielle (France) 1961, no. 50).

DESCRIPTORS: *Elastomers, *Butadienes, *Vinyl radicals, Catalysts, *Metalorganic compounds, Lithium, Hydrocarbons, Isoprene

Sibirtseva, V. E., Kustova, S. D. and others.
AN INDUSTRIAL METHOD FOR THE PRODUCTION OF AMBRIAL. [1962] 2p.
Order from ATS $4.00 ATS-65P60R

Trans. of Masloboino-Zhirovaya Prom[yshlennost'] (USSR) 1961, v. 27, no. 12, p. 31-32.

DESCRIPTORS: *Industrial production, Fats, Oils.

Sorokin, M. F., Angarskaya, E. Ya., and Shuvalova, A. N.
THE MECHANISM OF FORMATION OF EPOXY RESINS FROM EPICHLOROHYDRIN AND BIS(HYDROXYPHENOL) PROPANE. [1961] [20]p. 11 refs.
Order from OTS or SLA $1.60 62-10666

Trans. of Khimicheskaya Promyshlennost' (USSR) 1960, no. 8, p. 643-652.

DESCRIPTORS: *Epoxy resins, *Halohydrins, Phenols, *Propanes, Ethers, Glycerols, Hydrolysis, Synthesis.

Epoxy resins with increased softening temperatures can be obtained by the method of direct condensation, not resorting to the fusion method. Resins with higher softening temperatures have been obtained (with a molar ratio of epichlorohydrin to bis(hydroxyphenyl) propane from 1.5:1 to 1.1:1) by the method in which epichlorohydrin is gradually added to a mixture of bis(hydroxyphenyl) propane, 20% NaOH solution, and solvent (20% by weight of components not counting water). In such a synthesis method, epichlorohydrin goes into the reaction medium with a minimum possible concentration of NaOH and its contact with the alkali is guaranteed to be the least time. This reduces the effect of the hydrolysis reaction. For reducing the viscosity of the reaction mass in the process of resin synthesis, it is recommended that a mixture of toluene (70%) and butanol (30%) be used, in which the obtained resins are sufficiently well dissolved and which contains alcohol, alleviating the reaction of the epoxy group with the hydroxy group of bis(hydroxyphenyl) propane. The synthesis of resins must be carried out at 90-100° with some excess NaOH (0.1-0.2 moles as regards to epichlorohydrin). After heat treatment, almost all of the obtained resins are quite soluble in dioxane, acetone, ethyl alcohol, acetates and in a toluene-butanol mixture. The results of the work can be used to substantiate and rationalize the technological processes of epoxy resin synthesis. (Author)

Spirin, Yu. L., Polyakov, D. K. and others.
THE SEPARATE POLYMERIZATION AND COPOLYMERIZATION OF ISOPRENE, INITIATED WITH ETHYLLITHIUM. Oct 60, 20p.
Order from K-H $25.00 K-H-10358

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1960, v. 2, no. 7, p. 1082-1092.
Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 61-10731 [1960] 12p.

DESCRIPTORS: *Isoprene, Polymerization, Copolymerization, *Lithium compounds, Organic compounds, Catalysis.

Stepukhovich, A. D., Kosyreva, R. V., and Petrosyan, V. I.
KINETICS AND MECHANISM OF HYDROCARBONS DECOMPOSITION. I. MECHANISM OF THE THERMAL CRACKING OF PROPANE. [1962] 5p. 11 refs.
Order from OTS or SLA $1.10 62-14856

Trans. of #Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1961, v. 35 [no. 3] p. 600-604.

DESCRIPTORS: *Hydrocarbons, *Propanes, Decomposition, Reaction kinetics, Molecular isomerism, Gas chromatography

A gas chromathermographic study was made of the relation between the yield of products of the thermal cracking of propane and the extent of decomposition, the pressure and the temperature. Analytical data on the composition of the products confirm the self-inhibition of the cracking revealed in kinetic studies of the reaction and the existence of an inhibition limit with respect to the chain length. The reaction completely self-inhibited by the reaction products or the residual reaction is of a chain character, rather than a molecular rearrangement, and at the inhibition limit has an apparent chain length of 7-8 units. With increase in extent of decomposition and in pressure the demethanization reaction in the cracking process is intensified. This is explained in terms of the radical-chain theory by isomerization of isopropyl radicals to propyl radicals. In this way the part played by radical isomerization in the formation of cracking products is brought out. The cracking kinetics have been investigated by measurement of changes in pressure and in decomposition of the products, both methods yielding concordant results. (Author)

Tikhomirov, B. I., Yakubchik, A. I., and Klopotova, I. A.
CRYSTALLINITY OF THE HYDROGENATION PRODUCTS OF CIS-1,4-POLYBUTADIENE. [1961] [3]p. (2 figs. omitted) 2 refs.
Order from OTS or SLA $1.10 62-13988

Trans. from Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 3.

DESCRIPTORS: *Polymers, *Butadienes, Hydrogenation, *Crystal structure, X-ray diffraction analysis.

We have hydrogenated to various degrees of completion an unbranched cis-1,4-polybutadiene, containing 6% of 1,2 units and 5% of trans-1,4 units. X-ray structural analysis has yielded diffraction patterns indicating the presence of crystallinity at room temperature in the hydrogenation products with 70% or less unsaturation, i.e. in polymers that contain comparable numbers of irregularly positioned hydrogenated and nonhydrogenated butadiene units. The spherulite pattern becomes clearer and clearer as the degree of hydrogenation increases. These crystallization phenomena are apparently related to the packet structure of the hydrogenated polymers. The formation of sections that are identical with those in polyethylene does not result in an increase in the transverse dimensions of the macromolecules, though it does reduce the flexibility of the chains, increase interchain interaction, and facilitate regular packing of the macromolecules in the three-dimensional lattice

Tsuruta, Motohiro, Kuroki, Norihiko, and Nishio, Michiyuki.
[RESEARCHES] ON POLYVINYL CYANOETHYL ETHER. I. ITS SYNTHETIS METHOD, AND SEVERAL PROPERTIES. [1962] 7p. 4 refs.
Order from SLA $1.10 62-14971

Trans. of Kobunshi Kagaku (Japan) 1950, v. 7, [no. 4] p. 129-131.

DESCRIPTORS: *Polymers, Copolymerization, *Vinyl radicals, *Cyano radicals, *Ethyl ethers, Synthesis, Mechanical properties, Vinyl alcohol, Alcohols.

Vilim, Rostislav.
CONTROL OF MOLECULAR WEIGHT OF POLYPROPYLENE WITH THE AID OF CARRIERS. Aug62, 2500 words, 22 refs.
Order from CTS(Chem) $10.00 CTS(Chem)-284
subsequent copies $1.65/ea.

Trans. of Chemicky Prumysl (Czechoslovakia) 1962, v. 12[37] no. 2, p. 102-106.

DESCRIPTORS: *Polymers, *Propenes, *Molecular weight, Catalysts, *Metalorganic compounds, Titanium compounds, Aluminum compounds, Zinc compounds, Mercury compounds, Cadmium compounds.

Wittig, G.
ORIGIN AND DEVELOPMENT IN THE PHOSPHINE ALKYLENE CHEMISTRY. 15 Nov 56, 10p. 25 refs.
Order from SLA $1.10 62-16696

Trans. of Angew[andte] Chem[ie] (West Germany) 1956, v. 68, no. 16, p. 505-508.

DESCRIPTORS: *Phosphines, Alkyl radicals, Chemical reactions.

The discovery of phosphine alkylenes and their olefin-forming properties was made intentionally and by chance. The preparative importance of the new class of substances is discussed on a number of examples. (Author)

Zambelli, A., Pietro, J. di, and Gatti, G.
REACTION BETWEEN $AlRCl_2$ AND COMPLEXING AGENTS IN TERNARY CATALYST SYSTEMS FOR THE STEREOSPECIFIC POLYMERIZATION OF ALPHA OLEFINS. Aug 62, 450 words. 6 refs.
Order from CTS(Chem) $1.80 CTS(Chem)-295
subsequent copies $0.30/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1962, v. 44, no. 5, p. 529.

DESCRIPTORS: *Polymerization, *Ethylenes, Stereochemistry, Complex compounds, Catalysts, *Metalorganic compounds, *Aluminum compounds, Chlorides, Hydrocarbons.

Zannetti, R., Manaresi, P., and Buzzoni, G. C.
CRYSTALLINITY AND POLYMORPHISM OF POLY-ALPHA-BUTENE (Cristallinita e Polimorfismo del Poli-Alfa-Butene). [1962] [24]p. 13 refs.
Order from SLA $2.60 62-14311

Trans. of [la] Chim[ica] e [l]'Ind[ustria] (Italy) 1961, v. 43, no. 7, p. 735-740.
Another trans. is available from CTS(Chem) $16.00, subsequent copies $2.70 ea. as CTS (Chem)-235 [1961] 4000 words.

DESCRIPTORS: *Butenes, *Polymers, Crystal structure, *Polymorphism, Density, X-ray diffraction analysis.

The polymorphous behavior of isotactic poly-α-butene was studied by X-ray diffraction and by density measurements. The existence of three crystalline forms was ascertained. Only one (stable at room temperature) is of practical interest. A method for X-ray quantitative estimation of the percent crystallinity of this form is proposed analogous to that already proposed by other investigators for numerous polymers. The crystallinity determination was carried out also by density measurements; results obtained by the two techniques are compared, and the differences observed are discussed. Through measurements based on X-ray determinations, the transformation to the stable form has been studied, and the factors influencing the transformation have been evidenced. (Author)

Ziegler, Karl, Gellert, H. G. and others.
ALUMINUM-ORGANIC SYNTHESIS IN THE RANGE OF OLEFINIC HYDROCARBONS (Aluminium-Organische Synthese im Bereich Olefinischer Kohlenwasserstoffe). [1962] 19p. 13 refs.
Order from SLA $1.60 62-16697

Trans of Angewandte Chemie (West Germany) 1952, v. 64 [no. 12] p. 323-329.
Another trans is available from SLA mi$2.70, ph$4.80 as 60-18391 [1960] [26]p.

DESCRIPTORS: *Aluminum compounds, Lithium compounds, Hydrocarbons, *Ethylenes, Alkyl radicals, Catalysis, Manufacturing methods.

For abstract see Technical Translations 4: 609, 1960.

Zolotarev, E. Kh., Bataev, P. S., and Devyatova, V. I.
INVESTIGATION OF THE REPELLENTS. XI. DEPENDENCE OF THE REPELLENCY UPON CHEMICAL STRUCTURE OF ACYLATED PYPERIDINS AND HEXAMETHYLENIMINES. 31 May 62 [8]p. 2 refs. JPRS: 13988.
Order from OTS or SLA $1.10 62-24976

Trans. of [Nauchnye Doklady Vysshei Shkoly]. Biologicheskie Nauki (USSR) 1961, no. 4, p. 16-19.

DESCRIPTORS: *Insect repellants, Toxicity, Molecular structure, Acylation, *Piperidines, *Imines, *Fleas.

A connection was established between flea repellency and the chemical structure of acylated pyperidins and hexamethylenimines. In the series produced with aliphatic acids the repellency increases from formic to caprone compounds, particularly in N-benzoylpyperidin and N-benzoylhexamethylenimine. The replacement of hydrogen with chlorine in the acid radical of acetylpyperidin also increases the repellency of the compound. On the other hand the replacement of hydrogen with benzoic acid in the ortho-position of N-benzoylpyperidin sharply decreases the repellency of the compound.

Physical Chemistry

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 49, NO. 4: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 3p.
Order from OTS or SLA $1.10 62-10796

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 49, no. 4, p. 265-268 and 273-276.

DESCRIPTORS: *Benzenes, Absorption spectra, Silicon compounds, Dioxides, Gels, Adsorbents, *Coal, Hydrocarbons, Physical chemistry, Chemistry, Abstracting.

Contents:
Absorption spectrum of benzene adsorbed on silica gel, by E. N. Pavlova
Increase in the weight of a charge of coal produced by adding minute quantities of hydrocarbons, by A. Agroskin.

Almasy, Andor and Orsos, Sandor.
FIVE YEARS OF WORK AT THE RADIOCHEMICAL LABORATORY OF THE RESEARCH INSTITUTE FOR HEAVY CHEMICAL INDUSTRY. 2 July 62 [10]p.
JPRS: 14324.
Order from OTS or SLA $1.10 62-25609

Trans. of Magyar Kemikusok Lapja (Hungary) [1962] v. 17, no. 2, p. 71-73.

DESCRIPTORS: *Radiochemistry laboratories, *Radiochemistry, Laboratories, *Chemical industry, Fertilizers, Radioactive isotopes, Instrumentation, Ion exchange. *Chemical engineering.

Avramenko, L. I.
HYDROXYL IN FLAMES. II. HYDROXYL IN ACETYLENE FLAME. [1962] 3p. 4 refs.
Order from OTS or SLA $1.10 62-14615

[Condensed] trans. of Acta Physicochimica U. R. S. S., 1943, v. 18, no. 1, p. 58-68.

DESCRIPTORS: *Hydroxides, *Acetylenes, Hydrocarbons, *Flames.

Babushkin, A. A. and Uvarov, A. V.
A STUDY OF ADSORPTION AND SURFACE REACTION OF ETHYL ALCOHOL AT ALUMINUM OXIDE BY INFRARED SPECTROSCOPY. [1962] 9p. (4 figs. omitted) 14 refs.
Order from OTS or SLA $1.10 62-14346

Trans. of [Akademiya Nauk SSSR. Doklady] 1956, v. 110, no. 4 [p. 581-584].
Another trans. is available from CCT $21.00 as CCT-508TT [1959] 5p; and from OTS or ETC $1.55 as 61-17385, MTWL-826, 7p.

DESCRIPTORS: *Aluminum compounds, *Oxides, *Ethanol, Adsorption, Catalysis, *Infrared spectroscopy, Chemical reactions

Bauer, Richard.
MAGNESIUM-ALKYL-BORON HYDRIDE AND ITS REACTION BEHAVIOUR, II. [1962] 6p. 6 refs.
Order from SLA $1.10 62-14644

Trans. of Z[eitschrift für] Naturforschung (West Germany) 1961, v. 16b [no. 12] p. 839-840.

DESCRIPTORS: *Magnesium compounds, *Alkyl radicals, *Boron compounds, *Hydrides, Ethyl radicals, Diboranes, *Chemical reactions, *Reaction kinetics.

The preparation of magnesium hydride from diethyl magnesium and diborane proceeds by way of magnesium-alkyl-boron hydride as intermediate product. New experimental results are communicated. (Author)

Bolgar, A. S., Verkhoglyadova, T. S., and Samsonov, G. V.
THE VAPOR PRESSURE AND RATE OF EVAPORATION OF CERTAIN REFRACTORY COMPOUNDS IN VACUUM AT HIGH TEMPERATURE, tr. by N. H. Krikorian. [1961] 10p. 12 refs.
Order from OTS or SLA $1.10 AEC-tr-4865

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1961, no. 1, p. 142-145.

DESCRIPTORS: *Vapor pressure, *Evaporation, *Borides, *Carbides, *Nitrides, *Silicides, Titanium compounds, Zirconium compounds, Chromium compounds, Strontium compounds, Molybdenum compounds, Niobium compounds, Tantalum compounds, *Refractory materials, Temperature.
Investigations were made of the vapor pressure and rate of evaporation in vacuum of the borides of titanium, zirconium, chromium, and strontium; the carbides of titanium, zirconium, and chromium; molybdenum silicides; and the nitrides of titanium, nobium, and tantalum.

Cota Galan, Rodrigo.
INFLUENCE OF MOISTURE ON THE COMBUSTIBILITY OF TOBACCO. I. CURVES OF HYGROSCOPIC EQUILIBRIUM OF THREE NATIONAL VARIETIES. [1962] 21p.
Order from K-H $26.55 K-H 3174-b

Trans. of Inst[ituto] Nac[ional de] Invest[igaciones] Agron[omicas]. Bol[etin] (Spain) 1953, v. 8, p. 391-405.

DESCRIPTORS: *Moisture, *Combustion, *Tobacco.

Davtyan, O. K., Manakin, B. A. and others.
RELATION BETWEEN THE DEPOLARIZING OXIDES ON CARBON AND PLATINUM AND THE CATALYTIC EFFECT OF THE LATTER IN THE OXIDATION OF SO_2 (Issledovanie Mekhanizma Protsessov Okisleniya, Gidrirovaniya i Elektrokhimicheskogo Goreniya na Tverdykh Katalizatorakh. III. Svyaz' Mezhdu Depolyarizuyushchimi Okislami na Ugle i Platine s Kalalitcheskim Deistviem Polednikh v Reaktsii Okisleniya SO_2) tr. by J. Hardy. [Pt]. 3 [of] Investigation of the Mechanism of Heterogeneous Oxidation, Hydrogenation and Electrochemical Combustion of Solid Catalysts. [1962] [14]p. (foreign text included) 4 refs. [CSIRO] Trans. no. 5647.
Order from OTS or SLA $1.60 62-25642

Trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1961, v. 35, no. 6, p. 1186-1191.
Another trans. is available from ATS $9.25 as ATS-11P59R [1961] 5p.
DESCRIPTORS: *Sulfur compounds, *Dioxides, Oxidation, Catalysts, Catalysis, Platinum, Carbon, Oxides, *Electrochemistry, Combination.

A method for the electrochemical study of the chemisorption of oxygen on platinum and activated carbon in combination with chemical procedures has been developed for the case of the catalytic oxidation of SO_2. Oxygen, chemisorbed on the surface at low temperatures (20–100°) has been found to take part in the process of building up of the oxygen electrode potential. The same type of oxygen chemisorption takes place during electrochemical oxidation. Such chemisorbed oxygen on the platinum or activated carbon surface has been shown to participate in the catalytic oxidation of SO_2. During the reaction the entire oxygen capable of participating in the electrochemical process is removed from the surface. The platinum catalyst has been shown to become poisoned in an atmosphere of SO_2 at 20°. The poisoned platinum surface becomes incapable of chemisorbing oxygen. (Author)

Chirico, Aurelio de.
PHYSIOCHEMICAL RESEARCH ON SOLUTIONS OF POLYCARBONATE IN CHLOROFORM. [1962] 8p. 18 refs.
Order from SLA $1.10 62-16061

Trans. of [la] Chim[ica] e [l'] Ind[ustria] (Italy) 1960, v. 42 [no. 3] p. 248-251.

DESCRIPTORS: *Carbonates, *Polymers, *Chloroform, Solutions, Physical properties, Chemical properties, Viscosity, Light, Scattering.

Some physicochemical properties of the polycarbonate

$$\left[-O-C_6H_4-C(CH_3)_2-C_6H_4-O-CO-\right]_n$$ in chloroform

were studied by means of viscosity measurements and measurements of the intensity of diffused light at the "Flory temperature" of the solution. The results are discussed according to the Flory-Fox theory. (Author)

Denisov, Yu. N. and Troshin, Ya. K.
MECHANISM OF DETONATION COMBUSTION (Mekhanizm Detonatsionnogo Sgoraniya). [1962] [56]p. (foreign text included) 21 refs.
Order from OTS or SLA $5.60 62-14552

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1960, no. 1, p. 21-35.

DESCRIPTORS: *Combustion, Detonation, *Detonation waves, Propagation, Shock waves, Photographic analysis, Thermodynamics, Gases, Dynamics.

Proceeding from data obtained by the trace method and the method of photo-evolution on the periodic structure of detonation waves, we construct and compute a thermo-gas-dynamic model of detonation. In doing so, we attempt to clarify the elements of the detonation mechanism. (Author)

Dubinina, E. F. and Kudryavtsev, B. B.
SPEED OF SOUND PROPAGATION IN MIXTURES OF CHEMICALLY REACTING SUBSTANCES [Skorost' Rasprostraneniya Zvuka v Smesi Khimicheski Reagiruyushchikh Veshchestv]. [1961] 6p. 10 refs. MDF D-121.
Order from OTS $0.50 62-11232

Trans. of Zh[urnal] Fiz[icheskoi] Khim[ii] (USSR) 1955, v. 29, no. 4, p. 677-681.
Another trans. is available from INSDOC.

DESCRIPTORS: *Sound transmission, Velocity, Interferometers, *Methanes, Iodides, Anilines, Benzenes, Carbon tetrachloride, *Chemical reactions.

Sound speeds in solutions of methyl iodide and dimethylaniline in benzol and in CCl_4, as well as in the reacting mixture ($C_8H_{11}N+CH_3I$) were measured with an acoustical interferometer for temperatures from 10° to 40°C. The molecular sound speeds were computed in the solutions and in the reacting mixture. The molecular sound speed in the temperature range considered remains constant in solutions and in the reacting mixture. The molecular sound speed retains the property of an additive quantity with respect to the composition when the chemical reaction under consideration occurs between the mixture components. The sound speed varies very insignificantly as the reaction under investigation proceeds. The sound speed was measured in the mixture of reacting substances at the following frequencies: 0.67, 1.2 and 2.35 mc. As the frequency increased, an increase (approximately 0.8%) in the sound speed was detected, which is close to the limits of accuracy of the experiment. (Author)

Esin, O. A. and Shikhov, V. N.
ON THE KINETICS OF THE SILICON REDUCTION PROCESS. [1961] 9p. 4 refs. MDF E 102.
Order from OTS $0.50 62-11263

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya, 1956, no. 6, p. 113-118.

DESCRIPTORS: *Silicon, Reduction, Reaction kinetics, Dioxides, Silicon compounds, Electrochemistry, Slags

The kinetics were investigated of the process of silicon reduction by liquid iron in slags saturated with silicon dioxide. The reduction rate decreased strongly when the magnesium oxide in the slag was replaced by calcium or barium oxide. A temperature increase accelerates the silicon reduction from barium slags considerably. Replacement of the barium oxide by magnesium or calcium oxide in the slag decreases the influence of the temperature strongly. The influence of the cations on the process rate depended, in varying degree, on the weakening of the bond between the silicon and oxygen atoms in the slag.

Fateeva, N. S. and Grishko, A. N.
OXIDATION OF NITROGEN IN AN ARC DISCHARGE UNDER PRESSURE. 12 Jan 62 [10]p. 15 refs. FTD-TT-62-34; AD-271 818.
Order from OTS or SLA $1.10 62-19636

Unedited rough draft trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1961, v. 35, no. 11, p. 2553-2556.

DESCRIPTORS: Oxidation, *Nitrogen, Pressure, *Electrochemistry, Nitrogen compounds, *Oxides.

The yield of nitrogen oxides increased with pressure from 0.015% at 100 atm to 0.057% at 3000 atm.

Fischer, K. and Andress, K. R.
STUDY ON THE CRYSTALLINE STRUCTURE OF A SILVER TRISULFIMIDE-HYDRATE $(AgNSO_2 \cdot H_2O)_3$. [1962] 1p.
Order from SLA $1.10 62-16645

Abstract trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (East Germany) 1955, v. 281, no. 1/2, p. 168-182.

DESCRIPTORS: *Hydrates, *Silver compounds, *Sulfimides, Crystal structure.

Frank-Kamenetskii, D. A.
KINETICS OF COMPLEX REACTIONS. I. HOMOGENEOUS REACTIONS. [1962] 9p. 88 refs.
Order from OTS or SLA $1.10 62-10887

[Condensed] trans. of Uspekhi Khimii (USSR) 1941, v. 10, no. 4, p. 373-415.

DESCRIPTORS: *Reaction kinetics, *Hydrocarbons, Polymerization, Decomposition, Catalysis, Bibliography.

Glazov, V. M. and Vertman, A. A.
ON THE BEHAVIOR OF ALUMINUM, GALLIUM AND INDIUM ANTIMONIDES IN THE LIQUID STATE. [1959] 4p. 7 refs. MDF G-164.
Order from OTS $0.50 62-11441

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1958, v. 123, no. 3, p. 492-494.

DESCRIPTORS: *Antimonides, Phase studies, *Liquid metals, Thermodynamics, Reaction kinetics, Aluminum compounds, Gallium compounds, Indium compounds.

The temperature dependence of the magnetic susceptibility was determined for aluminum, gallium and indium antimonides in the liquid state and the results were compared with certain of their thermodynamic and kinetic properties. At the melting point the melts of the compounds have approximately the same short-range order structure as in the solid state. The coordination number increases as the temperature rises (the growth in the magnetic susceptibility of the melts of the compounds corresponds to this) and approaches dense packing at a certain temperature. The temperature at which relatively dense packing is achieved in a fluid corresponds to the first maximum on the curves of the temperature dependence of the magnetic susceptibility and the minimum on the curves of the temperature dependence of the free activation energy of the viscous flow. Upon further heating to a definite limit, no changes occur in the melts of the AlSb, GaSb and InSb compounds except those which accompany the heating of any fluid (weakening of the molecular interaction forces, increase in the intramolecular spacings, increase in the number of vacancies, etc.). The chemical compound is relatively stable in this temperature range in the liquid state. The properties change monotonically on this section: The magnetic susceptibility and the viscosity vary smoothly, the free activation energy of the viscous flow increases linearly. (See also 59-19013)

Gonikberg, M. G.
MECHANISM OF CHEMICAL REACTIONS AT HIGH PRESSURES. [1962] 10p.
Order from OTS or SLA $1.10 62-16064

Trans. of A[kademiya] N[auk] SSSR. Vestnik, 1961, v. 31, no. 5, p. 39-45.

DESCRIPTORS: *High pressure research, *High temperature research, *Chemical reactions, Reaction kinetics.

Haïssinsky, M. and Julien, R.
ULTRASONIC OXIDATION-REDUCTION OF FERRO-FERRICYANIDE IN AQUEOUS SOLUTION. [1962] 14p. 31 refs.
Order from SLA $1.60 62-10976

Trans. of Journal de Chimie Physique (France) 1960, v. 57, no. 7/8, p. 666-672.

DESCRIPTORS: *Radiochemistry, *Ultrasonic radiation, *Oxidation-reduction reactions, Iron compounds, *Cyanides, Hydrogen ion concentration, Solutions.

An aqueous solution of potassium ferrocyanide, which is either acid or neutral, under oxygen, argon or air, is oxidized to ferricyanide by ultrasonic action. The variation in yield with concentration presents a course known in radiochemistry as the "dilution effect." At high concentrations, the yield is greater under oxygen than under argon; when highly diluted it is almost the same in both cases. In an acid solution the ferricyanide is decomposed with the partial formation of aquopentacyanogen complexes. At a pH above 11, it is reduced to ferrocyanide, the yield being higher under argon. An interpretation of the test is given. (Author)

Kirsanov, A. V.
THE MECHANISM OF THE REACTION OF PHOSPHORUS PENTACHLORIDE WITH THE AMIDES OF CARBOXYLIC ACIDS. [1962] 21p. (7 refs. omitted) 4 refs.
Order from OTS or SLA $2.60 62-16177

Trans. of #Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1954, no. 4, p. 646-655.

DESCRIPTORS: *Chemical reactions, *Phosphorus compounds, *Chlorides, Amides, *Carboxylic acids, Isomeric transitions, Phosphoric acids.

The scheme by Wallach, which was generally accepted up to the present time, for the reaction of unsubstituted amides of carboxylic acids with PCl_5, is not correct. One does not obtain any amidochlorides if PCl_5 reacts with the N- unsubstituted amides of carboxylic acids. The true reaction occurring between

PCl_5 and unsubstituted amides of carboxylic acids lead to the formation of trichlorophosphazoacyls and two molecules HCl. These trichlorophosphazoacyls upon heating or under the catalytic action of HCl break down at room temperature so as to furnish $POCl_3$ and the nitriles. The chemical properties show that the reaction product obtained from PCl_5 and benzamide is the trichlorophosphazobenzoyl. Such trichlorophosphazoacyl is extremely reactive and may be used to synthesize the correspondingly substituted phosphoric acids. If PCl_5 is allowed to react with urethane one obtains the ethyl ester of trichlorophosphazoacetic acid, which at 45° C splits off C_2H_5Cl and furnishes the chloroanhydride of the isocyanatophosphoric acid. Under the action of PCl_5 one obtains from the ethyl ester of oxamic acid first the amide of dichloroethoxyacetic acid, and thereafter trichlorophosphazodichloroethoxyacetyl. (Author)

Korol', A. N. and Turkel'[taub] N. M.
CHOICE OF SOLVENT FOR THE GAS CHROMATOGRAPHY. [1962] 8p. 24 refs.
Order from OTS or SLA $1.10 62-16124

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961 [v. 6] no. 6, p. 61-66.
Another trans. is available from ATS $13.60 as ATS-98N56R [1961] 8p.

DESCRIPTORS: *Gas chromatography, Activity coefficient.

On basis of an analysis of the activity coefficients of alkylbenzenes and alcohols with a series of solvents it is advised for production of maximal relative retention volumes of two separable substances, differing mutually by the content of one or another structural group, to choose the solvent, of which the molecule contains several such groups. It was found, that the distribution coefficient dependence of the column efficiency is passing through a minimum. (Author)

Kuznetsov, A. N.
KINETICS AND MECHANISM OF NICKEL OXIDES REDUCTION BY HYDROGEN. [1962] 9p. (1 fig. omitted) 25 refs.
Order from OTS or SLA $1.10 62-16116

Trans. of #Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1960, v. 34 [no. 1] p. 32-38.

DESCRIPTORS: *Nickel compounds, *Oxides, Reduction, Hydrogen, Reaction kinetics

Kinetics of hydrogen reduction of the $Ni_2O_3 \cdot H_2O$, $NiO_{1.32}$ and NiO was investigated. Reduction of $Ni_2O_3 \cdot H_2O$ and $NiO_{1.32}$ by hydrogen is not accompanied by autocatalytic process development. The period of induction is absent, the process sets immediately out at maximal rate. It was established, that $Ni_2O_3 \cdot H_2O$ and $NiO_{1.32}$ are reduced in one stage; the crystallochemical conversions $Ni_2O_3 \cdot H_2O \rightarrow Ni_3O_4 \rightarrow NiO \rightarrow Ni$ are in these cases not detected on the kinetic curves. Curves of $NiO_{1.32}$ reduction have a completely smooth course. Descending part of $Ni_2O_3 \cdot H_2O$ reduction curves changes its position at different temperatures in function of the reduction degree; therefore it is non connected with phase conversions. The reduction of NiO takes place autocatalytically with an induction period. A scheme of the mechanism for the reduction process of anhydrous higher nickel oxides is proposed, in agreement with the observed phenomena and confirming the specific features of the reduction mechanisms of Fe_2O_3 and $CO_3O_4O_y$. The apparent activation energies of the reduction processes by hydrogen were determined as 33.0 kcal. for $Ni_2O_3 \cdot H_2O$, 24 kcal. for $NiO_{1.32}$ and 10.4 kcal for NiO. (Author)

Lygin, V. I., Kovaleva, N. V. and others.
ADSORPTIVE PROPERTIES AND INFRARED SPECTRA OF OXIDIZED CARBON BLACKS. [1962] 9p. 22 refs.
Order from OTS or SLA $1.10 62-14822

Trans. of #Koll[oidnyi] Zhur[nal] (USSR) 1960, v. 22 [no. 3] p. 334-339.

DESCRIPTORS: *Carbon black, Oxidation, *Spectographic analysis, *Infrared spectroscopy, Steam, *Adsorption.

A study has been made of the adsorption of water vapor and of the infrared spectra of channel black, of a special hypochlorine-oxidized black of a black from the oxide of graphite. Chemical analysis indicates that in the highly oxidized carbon black specimens various oxygen compounds are present, that strongly affect the adsorption of water. The infrared spectra demonstrate the presence of CO and OH groups in the surface compounds and the interaction of a part of the closely situated groups. (Author)

Mály, Yá., Peká, I. and others.
REACTION OF PLUTONIUM DIOXIDE WITH AMMONIUM HYDROGEN FLUORIDE IN THE ABSENCE OF WATER, tr. by Helen J. Chick and Robert Benz. [1961] 11p. 7 refs.
Order from OTS or SLA $1.60 AEC-tr-4787

Trans. of Radiokhimiya (USSR) 1961, v. 3, no. 2, p. 195-198.

DESCRIPTORS: *Plutonium compounds, *Ammonium radicals, *Hydrogen compounds, *Fluorides, *Oxides, Chemical reactions, Reaction kinetics.

A new method of obtaining PuF_4 by means of fluorination of plutonium dioxide with ammoniun hydrogen fluoride in the absence of water was devised. The chemical formulas for the reactions were as follows: $2PuO_2 + 5NH_4HF_2 \xrightarrow{125^\circ} 2NH_4PuF_5 + 2H_2O \cdot 3NH_3$

$NH_4PuF_5 \cdot 2H_2O \xrightarrow{160\text{-}200^\circ} NH_4PuF_5 + 2H_2O$

$NH_4PuF_5 \xrightarrow{250\text{-}280^\circ} PuF_4 + NH_3 + HF$. Determination of Pu, F, and NH_3 were made by both chemical and X-ray methods. The thermal stability and structure of the intermediate and final products were studied.

Nigmetova, R. Sh.
ELECTROCHEMICAL PROPERTIES OF GERMANIUM. [1962] 7p. 36 refs.
Order from OTS or SLA $1.10 62-10616

Trans. of A[kademiya] N[auk] Kaz[akhskoi] SSR [Alma Ata]. Inst[itut] Khim[icheskikh] Nauk. Trudy, 1960, v. 6, p. 178-183.

DESCRIPTORS: *Germanium, *Electrochemistry, Germanium alloys, Electrolysis, Chemical reactions, Electrodes, Semiconductors.

Portnoi, K. I., Levinskii, Yu. V., and Fadeeva, V. I.
ON THE CHARACTER OF THE REACTION OF CERTAIN REFRACTORY CARBIDES AND THEIR SOLID SOLUTIONS WITH CARBON, tr. by N. H. Krikorian. [1961] 5p. 8 refs.
Order from OTS or SLA $1.10 AEC-tr-4871

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1961, no. 2, p. 147-149.

DESCRIPTORS: *Carbides, Titanium compounds, Zirconium compounds, Tantalum compounds, Hafnium compounds, Eutectics, *Refractory materials, Chemical reactions.

The minimum fusion temperature was determined for carbon with five metallic carbides (TiC, ZrC, NiC, TaC, and HfC) and their solid solutions. The carbide powder (particle size 1 to 10μ) was fuzed with carbon in the form of graphite. Metallographic analyses showed that several systems had eutectic character.

Putseiko, E. K. and Terenin, A. N.
ACCUMULATION OF SEMICONDUCTOR ELECTRONS ON THE ORGANIC DYESTUFFS ADSORBED ON IT. [1962] 6p. (2 figs. omitted) 4 refs.
Order from OTS or SLA $1.10 62-14050

Trans. of [Akademiya Nauk SSSR. Doklady] 1950, v. 70, no. 3 [p. 401-404].

DESCRIPTORS: *Semiconductors, *Electrons, Photoelectric effects, Photosensitivity, Sensitivity, *Dyes, Adsorption, Thallium compounds, Halides.

Raschevsky, N. v[on].
EQUILIBRIUMS AND REACTIONS IN SYSTEMS WITH A VERY LARGE SPECIFIC SURFACE (Uber Gleichgewichte und Reaktionen in Systemen mit sehr Grosser Spezifischer Oberfläche). [1959] [48]p. (foreign text included) 12 refs.
Order from OTS or SLA $4.60 AEC-tr-3731

Trans. of Zeit[schrift] f[ür] Physik (Germany) 1929, v. 53, p. 107-129.

DESCRIPTORS: *Chemical equilibrium, *Chemical reactions, Drops, Surface area.

Roiter, V. A., Gaukhman, S. S. and others.
KINETICS AND MECHANISM OF CATALYTIC CONVERSION OF CARBON MONOXIDE. [1962] 6p. 14 refs.
Order from OTS or SLA $1.10 62-14163

[Condensed] trans. of Zhurnal Prikladnoi Khimii (USSR) 1945, v. 18, no. 7/8, p. 439-449.

DESCRIPTORS: *Carbon compounds, *Monokides, *Catalysis, Potassium compounds, Carbonates, Iron catalysts, Activated carbon, *Reaction kinetics

Schildknecht, H. and Vetter, H.
COLUMN CRYSTALLIZATION. Paper presented at Gordon Research Conference on Separation and Purification, New London, 28 July 60. [1962] 11p. 8 refs.
Order from SLA $1.60 62-10958

Trans. of Angew[andte] Chem[ie] (West Germany) 1961, v. 73, no. 17/18, p. 612-615.

DESCRIPTORS: *Crystallization, Melting, Alcohols, DNT, *Purification, Fractionation, Separation, Crystals.

A method of fractional crystallization and fusion is described which, like column distillation, represents a true countercurrent process. The new separating process may be used to purify crystallizable compounds that melt without decomposition and to separate mixed-crystal systems. Compared to zonal fusion, it leads to pure substances much more rapidly, as experiments with stearyl alcohol, cetyl alcohol and 2,4-dinitrotoluene have shown. (Author)

Shalimova, K. V. and Pirogova, N. V.
THE INFLUENCE OF TEMPERATURE ON THE OPTICAL ABSORPTION OF POLYCRYSTALLINE CADIUM SULPHIDE LAYERS. 9 Feb 62 [6]p. 6 refs.
Trans. Log no. 1289-Z.
Order from OTS or SLA $1.10 62-19272

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 139, no. 4, p. 938-941.

DESCRIPTORS: *Cadmium compounds, *Sulfides, Crystals, Films, *Spectrographic analysis, Temperature, Absorption.

We discuss the fundamental laws governing the variation of CdS absorption as the investigatory temperature changes from room temperature to that of liquid nitrogen. (Author)

Shpil'rain, E. E. and Asinovskii, E. I.
CALCULATION OF THE THERMODYNAMIC PROPERTIES AND THE CONSTRUCTION OF is-DIAGRAMS FOR ALKALI METALS. 18 Jan 62 [19]p. 24 refs. FTD-TT-61-127; AD-270 775.
Order from OTS or SLA $1.60 62-19652

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 2, p. 18-26.

DESCRIPTORS: *Alkali metals, Vapors, Thermodynamics, Enthalpy, Entropy, Pressure, Mathematical analysis, Theory.

On the basis of the data available on the thermodynamic properties of alkali metals and also vapor phases, we develope a method for calculating their thermodynamic functions. An analysis is made of the effect of dimerization in the vapor of alkali metals and a method is shown for taking into account this effect when calculating the enthalpy, entropy, and pressure of saturated vapor. An is-diagram (enthalpy-enthropy diagram) is shown for alkali metals. (Author)

Straubel, Harold.
THE ELECTROSTATIC ATOMIZATION OF LIQUIDS. Preliminary Report. [1962] 6p. (7 figs. omitted) 2 refs.
Order from SLA $1.10 62-16631

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1954, v. 6, no. 6, p. 264-267.

DESCRIPTORS: *Electrostatics, *Atomization, Liquids, *Organic compounds, Electron microscopy

The properties of various organic liquids are discussed with regard to the best atomization. It is shown as to how the charged floating particles are applied to model experiments on the electron motion, either in the Braun's tube or in the electron microscope. (Author)

Tarama, Kimio, Teranishi, Shiichiro, and Yasui, Teruo.
RATE OF REDUCTION OF VANADIUM PENTOXIDE CATALYSTS BY HYDROGEN. [1962] [13]p. 7 refs.
Order from SLA $1.60 62-14963

Trans. of Nihon Kagaku Zasshi (Japan) 1961, v. 82, no. 4, p. 438-441.

DESCRIPTORS: *Catalysts, Oxides, *Vanadium compounds, Hydrogen, Reduction, Velocity, *Vanadium catalysts, Crystals, Lattices.

The apparent heat of activation of reduction of vanadium (V) oxide catalysts alone by hydrogen did not change depending on the manner of preparation of the sample, and a value of 19~21 kcal/mol was presented. But the velocity of reduction of vanadium (V) oxide was influenced by the manner of preparation of the catalyst, and it was discovered that the more the method of preparation of a sample increased distortion of its crystal lattice, the more easily was it reduced. Addition of a small amount of molybdenum (VI) oxide lowered the apparent heat of activation of reduction by hydrogen, while addition of alumina (α) had the effect of increasing it instead. It was also found that a parallel relationship existed between the hydrogen-reduction velocity of vanadium (V) oxide catalysts and their catalytic activity toward carbon monoxide oxidation. (Author) (Lectured in part at the Catalytic Chemistry Symposium, in April, 1956.)

Tomassi, W.
POTENTIOMETRIC STUDIES OF ADSORPTIVE LAYERS ON CARBON POWDER. [1962] 13p. (2 figs. 5 tables omitted) 1 ref.
Order from SLA $1.60 62-16739

Trans. of Electrochimica Acta (U. S.) 1959, v. 1 [no. 2/3] p. 283-290.

DESCRIPTORS: *Electrochemistry, *Electric potential, Electrodes, *Carbon, Chlorine, Hydrochloric acid, Ammonia, Adsorption, *Powders.

Toth, Kalman.
MOLECULAR FILTERS. 24 Oct 61 [14]p. (9 figs. omitted). JPRS: 10685.
Order from OTS or SLA $1.60 62-19516

Trans. of Technika (Hungary) 1961, v. 5, no. 7, p. 2.

DESCRIPTORS: *Porous filters, *Molecules, *Adsorbents, *Organolites, Alkaline earths, Alkaline earth metals, Aluminum compounds, Silicates, Hydrides, Crystal structure, Adsorption, Gases, Liquids, Purification

Zaalishvili, Sh. D.
THE SECOND VIRIAL COEFFICIENT OF PURE GASES. [1962] [24]p. 80 refs.
Order from OTS or SLA $2.60 62-14879

Trans. of Uspekhi Khimii (USSR) 1955, v. 24, [no. 6] p. 759-778.

DESCRIPTORS: *Gases, *Thermodynamics, Pressure, Equations of state, Thermochemistry.

A literature survey.

EARTH SCIENCES

HERALD OF MOSCOW UNIVERSITY, SERIES 5: GEOGRAPHY, 1961 [VOL. 16] NO. 2: SELECTED ARTICLES. 13 July 62 [37]p. 23 refs. JPRS: 14463.
Order from OTS or SLA $3.60 62-25997

Trans. of Moscow U. Vestnik. Seriya 5: Geografiya (USSR) 1961 [v. 16] no. 2, p. 3-9, 27-33, 72-75.

DESCRIPTORS: *Geography, *Mapping, *Terrain, *Inland waterways, Maps, Conferences, *Plants, Geographers

Contents:
Cartometric study of landscapes, by V. A. Nikolaev and Chan Mu-tung
Maps of inland waters in national atlases, by T. G. Svarkova
Conference on the Problems of Geobotanical Mapping, Novosibirsk, 14-18 Nov 60, by A. G. Voronov
V. N. Tatishchev as a geographer, by N. G. Skachenko

Bortnitskaya, V. M.
PROCEDURE FOR STUDYING THE RESERVOIR PROPERTIES OF FRACTURED ROCK FROM CORES. [1962] 5p.
Order from ATS $6.25 ATS-11P61R

Trans. of Geol[ogiya] Nefti i Gaza (USSR) 1961, v. 5, no. 11, p. 41-43.

DESCRIPTORS: *Well drilling, *Rock, Sampling.

Fedorov, K. N.
COASTAL WIND CURRENTS AND THE THEORY OF EKMAN, tr. by Wilvan G. Van Campen. Dec 61, 7p. 6 refs.
Order from OTS or SLA $1.10 62-23277

Trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1959, no. 8, p. 1238-1241.

DESCRIPTORS: *Wind, *Sea breeze, Deflection, Velocity, Ocean currents, Turbulence, Beaches, Geophysics.

An analysis shows that Ekman's theory describes very well those phenomena observed in the sea which are connected with wind currents and can be employed also for the description of some aspects of the coastal circulation, in spite of the disregard of the nonlinear elements in the basic formulae and of the slope of the sea surface along the shore in the solution of the given problem. A formula is presented, which together with graphs and tables that can be made up for coefficients of M, N, A, m_o, n_o, d_o, and β_o, can serve for the calculation of the direction of coastal currents on a coast not having a very complex configuration from the direction of the wind and the depth of the sea.

Kolesnikov, A. G. and Ivanov, V. I.
A CORRELOMETER FOR THE INVESTIGATION OF THE STRUCTURE OF THE TURBULENCE OF NATURAL WATER AND AIR CURRENTS. [1961] [4]p. 6 refs. [DSIR NLL] M. 4673.
Order from OTS or SLA $1.10 62-19130

Trans. of Moscow U. Vestnik. [Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii] (USSR) 1959 [v. 14] no. 6, p. 146-148.

DESCRIPTORS: *Water currents, *Air, *Turbulence, Statistical functions, Computers, Magnetic amplifiers.

Schulz, W.
THE APPLICATION OF HEAT TO INCREASE THE RECOVERY FROM OIL RESERVOIRS WITH SPECIAL CONSIDERATION OF THE IN SITU COMBUSTION PROCESS. [1962] 49p.
Order from ATS $45.75 ATS-56P61G

Trans. of Erdöl-Z[eitschrift] (West Germany) 1962, v. 78, no. 1, p. 17-44.

DESCRIPTORS: *Oils, Heat treatment, *Combustion.

Šimon, M. and Hartmann, H.
IN THE TIEN-SHAN MOUNTAINS (In den Bergen des Tien Schan). 3 Jan 61 [26]p. JPRS: 7408.
Order from OTS or SLA $2.60 62-24554

Trans. of Vermessungstechnik (East Germany) 1960, v. 8, no. 6, p. 153-158.

DESCRIPTORS: *Mountains, *Glaciers, Ice, Exploration, Aerial photography, Mapping, Trigonometry, Height finding, *Geodesics, Geophysics

German participants accompanied a Soviet expedition, which investigated the central Tujuk glacier in Sailiski-Alatau, a part of the Tien-Shan. The research program included: (1) glacier dynamics, by means of direct geodetic investigations; (2) glacier thickness, by means of seismic methods; (3) the thermic behavior of glacial layers; (4) glacial thawing in connection with the heat balance of the glacier-atmosphere system; (5) the accumulation process of glacial masses; (6) the moraine formation process and the dynamics of the destructive effects of glacial layers; (7) hydrometric work on the study of water from melted ice and its role in supplying rivers; (8) the structure of ice; (9) photography of the Tujuksu glacial area and drawing maps with the scales 1:2000, 1:5000 and 1:10,000; and (10) measurement of the velocity of the glacial stream by photogrammetric methods.

Tarczy-Hornoch, Antal.
HUNGARIAN PARTICIPATION IN THE INTERNATIONAL GEOPHYSICAL YEAR. 26 June 62 [10]p. JPRS: 14282.
Order from OTS or SLA $1.10 62-25533

Partial trans. (some parts summarized) of Magyar Tudomany (Hungary) 1962, v. 7[69] no. 2, p. 87-95.

DESCRIPTORS: *Meteorology, *Ionosphere, Cosmic rays, Earth, Magnetic fields, *Geophysics, *Hungary.

Climatology and Meteorology

METEOROLOGY AND HYDROLOGY, 1962, NO. 4: SELECTED ARTICLES. 28 June 62 [35]p. 49 refs. JPRS: 14310.
Order from OTS or SLA $3.60 62-25532

Trans. of Meteorologiya i Gidrologiya (USSR) 1962, no. 4, p. 14-21, 46-47, 66-73.

DESCRIPTORS: *Meteorology, *Hydrology, *Weather forecasting, *Clouds, Mountains, Scientific reports, Scientific organizations, Scientific research, Geophysics, Upper atmosphere.

Contents:
The complex method of forecasts, by N. A. Bagrov
The problem of modification of frontal cloud systems in mountainous regions, by I. V. But
Publications of scientific research institutions of the hydrometeorological service in 1961
Final session of the scientific council of the Central Institute of Forecasts, by L. M. Margolin
Final session of the scientific council of the Main Geophysical Observatory im. A. I. Voeikov, by E. A. Polyakova
Final session of the scientific council of the Central Aerological Observatory, by G. L. Belyaeva.

[REPORTS OF THE ACADEMY OF SCIENCES USSR] 1961, VOL. 140, NO. 3: [SELECTED ARTICLES]. [1962] [13]p. 18 refs. [DSIR] NLL M. 6312.
Order from OTS or SLA $1.60 62-25950

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 140, no. 3, p. 575-582 and 591-594.
Other translations of each are available separately.

DESCRIPTORS: *Radar, *Clouds, Scattering, *Radar signals, *Radio waves, *Moisture, *Particles, *Precipitation, Radar analysis.

Contents:
The use of radar for research into cloud structure, by A. M. Borovnikov and others
The relationship between the fluctuation spectrum of a radar signal and the movement of scatterers in meteorological objects, by A. G. Gorelik and Yu. V. Mel'nichuk
The use of elliptically polarized radiowaves for the study of clouds and precipitations, by A. B. Shupyatskii and S. P. Morgunov.

SOVIET METEOROLOGICAL STUDIES. 19 June 62 [92]p. 34 refs. JPRS: 14165.
Order from OTS or SLA $8.60 62-25471

Trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1961, v. 111[173] p. 81-98 and 136-178.

DESCRIPTORS: Meteorology, *Weather forecasting, *Solar energy, Solar distrubances, *Geophysics, Terrestrial magnetism, *Atmospherics, *Hydrology, Humidity, Precipitation

Contents:
The principles of a rational distribution of a meteorological station network, by L. S. Gandin
Heliogeophysical relationships during various forms of atmospheric circulation, by T. V. Pokrovskaya and N. L. Spitsyna
The improvement and practical application of the synoptic-climatological method of long-range hydrometeorological forecasts, by L. A. Vitel's
An analysis of solar activity in prognostic relationships, by L. A. Vitel's

STUDIES IN WEATHER FORECASTING. 19 June 62 [30]p. 7 refs. JPRS: 14255.
Order from OTS or SLA $2.60 62-25469

Trans. of Tsentral'nyi Institut Prognozov. Trudy (USSR) 1961, v. 112, p. 18-31 and 40-45.

DESCRIPTORS: *Weather forecasting, Wind, Velocity, *Cyclones, *Antcyclones, Motion, Maps, Meteorological data, Statistical functions.

Contents:
Divergence and curl of wind velocity and the Laplacian ΔH at heights in quasi-vertical cyclones and anti-cyclones, by A. N. Mertsalov
Results of testing methods of forecasting the absolute geopotential of the isobaric surfaces of 500 and 300 millibards, by T. D. Sereda.

Ambrozy, Pal and Gotz, Gusztav.
THE APPLICATION OF THE URAL-1 ELECTRONIC COMPUTER IN METEOROLOGY. 29 Jan 62 [6]p. JPRS: 12191.
Order from OTS or SLA $1.10 62-19558

Trans. of Idojaras (Hungary) 1961, v. 65, no. 3, p. 152-153.

DESCRIPTORS: *Meteorology, *Computers, Programming, *Digital computers.

Averkiev, M. S.
A MORE ACCURATE METHOD FOR COMPUTING TOTAL RADIATION. 5 June 62 [19]p. 18 refs. JPRS: 13999.
Order from OTS or SLA $1.60 62-24971

Trans. of Moscow U. Vestnik. Seriya 5: Geografiya (USSR) 1961 [v. 16] no. 1, p. 40-47.

DESCRIPTORS: *Solar energy, *Thermal radiation, Determination, Clouds, Meteorology, Climatic factors, Earth, Atmosphere.

Budyko, M. I. and Pobiyakho, V. A.
THE THERMAL ZONALITY OF THE EARTH [AND] THE RKZ-1A RADIOSONDE. 2 Mar 62 [30]p. (3 figs. omitted) 11 refs. JPRS: 12758.
Order from OTS or SLA $2.60 62-23326

Trans. of Meteorologiya i Gidrologiya (USSR) 1961, no. 11, p. 7-14 and 50-53.

DESCRIPTORS: *Solar energy, *Thermal radiation, Arctic Regions, Climate, Weather forecasting, *Radiosondes.

Recent data on the radiation rate and the thermal balance of the earth shows that in summer the considerable length of the daytime in the high latitudes more than compensates for the influence of the low altitudes of the sun upon the average magnitudes of total radiation. Thus, the drop in temperature in the high latitudes in summer as compared with the equator cannot in the least be explained by the decrease in the total radiation arriving. The ice cover presently prevailing in the Arctic is unstable and may disappear in the course of a period of time which is comparatively brief from the geological point of view. This will lead to a restoration in the northern hemisphere of climatic conditions typical of the pre-ice age. The RKZ-1A radiosonde consists of autonomous data units for pressure, temperature and humidity and a radio transmitter. Information on the value of the meteorological elements of the free air are transmitted in the form of coded radio signals which are utilized by the radar station for bearings and automatic tracking of the radiosonde according to angular coordinates.

Kats, A. L.
CHARACTERISTICS OF THE EMPIRICAL INFLUENCE FUNCTIONS IN THE NORTHERN HEMISPHERE FOR A FORECAST OF THE PRESSURE FIELD FOR 3-5 DAYS, BY SINGLE-TYPE INITIAL MACROPROCESSES (Osobennosti Empiricheskikh Funktsii Vliyaniya na Svernom Polusharii dlya Prognoza Baricheskogo Polya na 3-5 Dnei po Odnotipnym Iskhodnym Makroprotsessam) tr. by Irene A. Donehoo. June 62, 11 refs.
Order from OTS $0.50 62-11737

Trans. of Met[eorologiya] i Gidr[ologiya] (USSR) 1961, no. 12, p. 15-22.

DESCRIPTORS: Northern hemisphere, *Weather forecasting, Statistical analysis, Meteorological data, *Barometric pressure

A two-level model was used for finding the empirical influence functions for the purpose of forecasting pressure variations at sea-level and the H_{500} geopotential. For this, over the Atlantic-Eurasian sector of the Hemisphere, the data on the distribution of pressure at sea-level and also the H_{500} at each of the 11 uniformly distributed points, were used. The forecast for both the pressure variations at sea level and the geopotential H_{500} variations (3), for 48, 72 and 120 hours had approximately the same evaluation.

Kotariya, A. F.
PROBLEM OF THE CLIMATOLOGICAL COMPUTATION OF TOTAL RADIATION UNDER CONDITIONS OF THE COMPLEX TOPOGRAPHY OF GEORGIA. 25 June 62 [8]p. 12 refs. JPRS: 14265.
Order from OTS or SLA $1.10 62-25496

Trans. of Akademiya Nauk Gruzinskoi SSR [Tiflis]. Soobshcheniya, 1961, v. 26, no. 2, p. 161-165.

DESCRIPTORS: *Solar energy, Mathematical analysis, Terrain, Climate.

Sternzat, M. S. and Sapozhnikov, A. A.
METEOROLOGICAL INSTRUMENTS, OBSERVATIONS, AND UTILIZATION, CHAPS. V–VI AND XII. 27 June 62 [115]p. JPRS: 14307.
Order from OTS or SLA $9.60 62-25537

Trans. of mono. Meteorologicheskie Pribory Nablyudeniya i Ikh Obrabotka, Leningrad, 1959, p. 124-168 and 283-310.

DESCRIPTORS: *Meteorological instruments, *Evaporation, Evaporators, Soils, *Radiation instruments, Pyrheliometers, Reflectometers, Solar energy, Weather forecasting, *Radio equipment, *Albedo (Astronomy)

Contents:
Measurement of evaporation
Measurement of radiant energy (actinometry)
Long-range automatic and meteorological equipment

Veidner, I. N.
THE METEOROLOGICAL SERVICE IN AFGHANISTAN. 14 Feb 62 [11]p. JPRS: 12468.
Order from OTS or SLA $1.60 62-19159

Trans. of Meteorologiya i Gidrologiya (USSR) 1961, no. 10, p. 54-56.

DESCRIPTORS: *Meteorology, *Afghanistan, Climate, Weather forecasting, *Weather stations, Meteorological instruments.

Yudin, M. I.
A COMPLETE SYSTEM OF EQUATIONS FOR DETERMINING NON-GEOSTROPHIC WIND AND VERTICAL MOTIONS (Polnaya Sistema Uravnenii dlya Opredeleniya Ageostroficheskogo Vetra v Vertikal'nykh Dvizhenii) tr. by Irene A. Donehoo. June 62, 10p. 9 refs.
Order from OTS $0.50 62-11738

Trans. of mono. Koordinatsionnaya Komissiya po Chislennym Metodam Prognoza [Materials of the Conference of the Coordinating Commission on Numerical Forecast Methods] Materialy Soveshchaniya, Leningrad, 1961, p. 63-70.

DESCRIPTORS: *Wind, Motion, Velocity, *Weather forecasting, Equations

In this article a system of equations is developed for determining the deviations of wind from the geostrophic and the vertical velocity. Small terms which had been discarded in earlier works have been preserved in the result. The question of the application of the system obtained for the purpose of a joint solution of the problem on the analysis and forecasting of weather is examined. (Author)

Geodesy

TRANSACTIONS OF THE INSTITUTE OF GEODETIC, AERIAL SURVEY, AND CARTOGRAPHIC ENGINEERS, 1958, VOL. 32 [SELECTED ARTICLES]. [1961] [50]p. 3 refs. ACIC RR-15b.
Order from OTS or SLA $4.60 62-15573

Trans. of Moskovskii Institut Inzhenerov Geodezii, Aerofotos"emki i Kartografii. Trudy (USSR) 1958, v. 32, p. 37-60 and 107-112.

DESCRIPTORS: *Geodesics, *Aerial photography, *Mapping, Geography, Measurement, Stars, Azimuth, *Trigonometry, Equations

Contents:
A comparison of the Talcott and Pevtsov methods for determining latitude, by A. N. Kuznetsov
Experiment in the utilization of base and azimuth conditions in space triangulation, by G. D. Fedoruk
Methods for the solution of trigonometric equations, by A. P. Matorin

TRANSACTIONS OF THE MOSCOW INSTITUTE OF GEODETIC, AERIAL SURVEY, AND CARTOGRAPHIC ENGINEERS, 1957, VOL. 29: [SELECTED ARTICLES]. [1961] [72]p. 17 refs. ACIC RR-15a.
Order from OTS or SLA $7.60 62-15576

Trans. of Moskovskii Institut Inzhenerov Geodezii, Aerofotos"emki i Kartografii. Trudy (USSR) 1957, v. 29, p. 27-32, 57-68, 81-108.

DESCRIPTORS: *Geodesics, *Aerial photography, *Mapping, *Numerical methods and procedures, Computers, *Trigonometry, Azimuth, Measurement

Contents:
The non-logarithmic computation of geodetic coordinates of points in the first order triangulation of the USSR, by G. V. Bagratuni
The problem of the importance and accuracy of Laplace azimuths, by B. N. Rabinovich
The adjustment of triangulation with measured sides and angles (directions) by the method of indirect measurements on a plane, by G. A. Burmistrov
Methods of resetting the circle during the measurement of horizontal angles, by I. M. Konopal'tsev.

Avdulov, M. V.
DETERMINATION OF THE REPRESENTATION ERROR OF GRAVITY ANOMALIES BY THE MEAN GRADIENT METHOD. 15 Mar 62 [14]p. 4 refs. JPRS: 12961.
Order from OTS or SLA $1.60 62-23430

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Geodeziya i Aerofotos"emka (USSR) 1961, no. 4, p. 67-74.

DESCRIPTORS: *Gravity anomalies, Errors, Determination, Numerical methods and procedures, Mapping, Geodesics

The method proposed here was tested on field data. The representation error, obtained by this method in case of a distance of 2 km between observation points, amounted to 0.15 mgl; this figure is 10 times smaller than the value of the representation error determined by the Graf-Hunter method. An estimate was made of the interpolation error for the above-mentioned sector of the anomalous field. The magnitude of this error was found to be equal to 0.10 - 0.15 mgl. (Author)

Gamburtsev, G. A. and Berzon, I. S.
HIGH FREQUENCY SEISMIC PROSPECTING. [1961] 7p. 7 refs. MDF G-100.
Order from OTS $0.50 62-11202

Trans. of A[kademiya] N[auk] SSSR. 1955, v. 101, no. 5, p. 841-844.
Another trans. is available from OTS or SLA $1.10 as 62-14581 [1962] 9p.

DESCRIPTORS: *Seismographs, *Geophysical prospecting, High frequency, Wave characteristics.

Information is reviewed on (1) features of the high-frequency apparatus, (2) the operating procedure of the high-frequency seismic method, (3) the recorded waves and their predominant frequencies, (4) the resolving power of the high-frequency seismic method, (5) suppression of wave interference, (6) the use of the dynamic wave characteristics in the method, and (7) exploration possibilities of the method.

Gamburtsev, G. A., Veitsman, P. S., and Tulina, Yu. V.
THE STRUCTURE OF THE EARTH'S CORE IN THE NORTH TIEN-SHAN REGION ACCORDING TO THE RESULTS OF PLUTONIC SEISMIC EXPLORING [Stroenie Zemnoi Kory v Raione Severnogo Tian' shania po Dannym Glubinnogo Seismicheskogo Zondirovaniya]. [1961]. 7p. (1 fig. omitted) 11 refs. MDF G-101.
Order from OTS $0.50 62-11199

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 105, no. 1, p. 83-86.

DESCRIPTORS: Earth, Structures, *Stratification, *Seismographs, *Geophysical prospecting, *Geological survey, Gravity anomalies, Mountains, Rock.

Observations were carried out along contours in two directions: (1) between Lake Issyk-Kul' and the eastern part of Lake Balkhash; and (2) between Lake Issyk-Kul' and the western part of Lake Balkhash.] The profiles obtained show that the surface of the basalt stratum and the Mokhorovichich surface do not occur in conformance within the limits of the region investigated. An upheaval of the basalt surface and a certain sinking of the Mokhorovichich surface are observed in the regions of the mountain ridge upheavals, the Kungei-Zailiiskii Alatai system and the Dzhungarskii Alatai. According to the PSE data, there is also an indication of an upheaval of the basalt stratum surface under the Kirgiz ridge. In contradiction to this, a dip in the basalt surface and an upheaval of the Mokhorovichich surface occur in the regions of the Issyk-Kul', Ilii and Balkhash-Alakul' depressions. The basalt width is 40 to 42 km under the Kungei and Zailii Alatai system; the width of this stratum is 24 to 26 km under the Ilii depression. Hence, the upheaval of the surface of the basalt stratum and the increase in its width in comparison with the depression regions correspond to the mountain ridge in the North Tien-Shan region.

Malovichko, A. K. and Nepomnyashchikh, A. A.
METHOD OF ANALYTICAL CONTINUATION OF GRAVITATIONAL ANOMALIES [AND] LOGARITHMIC GRAVITY MEASURING GRIDS. [1962] [23]p. 5 refs. ACIC LD-48-c.
Order from OTS or SLA $2.60 62-15979

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1952, no. 1, p. 35-46.

DESCRIPTORS: *Gravity anomalies, Geophysics, Earth, Gravity, Bessel functions.

Veselov, K. E.
GRAVIMETRIC APPARATUS: DEVELOPMENT OF THE SOVIET GAK-6M PRECISION GRAVIMETER. 31 May 62 [12]p. JPRS: 13932.
Order from OTS or SLA $1.60 62-24993

Trans. of mono. Sostoyanie i Perspektivy Razvitiya Razvedochnoi Geofiziki (The Status of and Prospects for the Development of Exploration Geophysics) Moscow, 1961, p. 410-413.

DESCRIPTORS: *Gravity, Instrumentation, Geophysics, Geophysical prospecting, *Precision equipment.

The GAK-6M gravimeter is basically an improved GAK-3M. Its performance data are: threshold of sensitivity 0.005 milligals, the precision of the measuring device 0.02, weight 4 kilograms, and the temperature coefficient did not exceed 0.03 to 0.05 milligals per degree over a range of temperature changes of 30 degrees. Thus, the GAK-6M gravimeter is equal to modern foreign gravimeters in a number of basic characteristics. But it is still inferior to the Worden gravimeter in accuracy and stability.

Zagrebin, D. V.
THE THEORY OF THE REGULARIZED GEOID. [1961] [185]p. 76 refs. ACIC RR-39.
Order from OTS or SLA $13.00 62-15966

Trans. of Akademiya Nauk SSSR. Institut Teoreticheskoi Astronomii. Trudy, 1952, v. 1, p. 87-222.

DESCRIPTORS: *Geodesics, *Geodetic data, *Earth, Gravity, *Ellipsoids, Theory, Functions, Tables.

A theory is devised which yields a determination of the geoid relative to an ellipsoidal surface. Lame's functions are used in the analysis of this formulation, although spherical functions were applied in the Stokes theory. The theory developed is applied to the determination of the undulations of an ellipsoidal geoid with three unequal axes relative to F. N. Krasovskiy's ellipsoid. Inasmuch as this ellipsoid has been accepted as the basic surface for all geodetic work in the USSR, the numerical and tabulated data may find applications in various branches of our (Soviet) geodetic science. Formulas are given for the determination of the deviation of the geoid from the ellipsoidal surface, and for the distribution of gravity over the triaxial ellipsoid of the Central Scientific Research Institute of Geodesy, Aerial Survey and Cartography (A. A. Izotov) and over F. N. Krasovskiy's ellipsoid. Tables are appended to facilitate the task of determining the undulations of the geoid relative to the ellipsoid. (Author)

Abushik, A. F.
SILURIAN OSTRACODS OF THE SIBERIAN PLATFORM. [1962] 208p. (11 plates 1 table 22 drawings omitted) 24 refs.
Order from OTS or SLA $14.00 62-23494

Trans. of Vse[soyuznyi] Ge[ologicheskii] I[nstitut]. [Trudy] (USSR) 1960, v. 39, p. 1-130.

DESCRIPTORS: *Crustacea, *Foraminifera, Aquatic animals, Geological survey, *Paleoecology, Deposits, Classification, Siberia.

Descriptions of 31 species of ostracods belonging in 15 genera and 9 families, are given. Three genera and 22 species are new. In view of the fact that representatives of the superfamily Leperditacea had been least thoroughly studied in the USSR and abroad, these forms are examined here in particularly great detail. History of the study of these ostracods, the problems of their structure and of the orientation of their shell, terminology and classification of these ostracods are presented. In describing Leperditacea, large (superfamily, family), as well as small (subfamily, genus) systematic units are diagnosed. Diagnoses of genera alone are given for representatives of other groups of ostracods. The descriptions are arranged in a systematic order regardless of the age and occurrence.

Bogoroditskii, K. F.
MOVEMENT OF NATURAL GASIFIED WATERS IN WELLS (Dvizhenie Prirodnykh Gazirovannykh Vod v Skvazhinakh). [1962] [41]p. (foreign text included) 5 refs.
Order from OTS or SLA $4.60 62-14598

Trans. of Akademiya Nauk SSSR. Laboratoriya Gidrogeologicheskikh Problem. Trudy, 1955, v. 12, p. 71-88.

DESCRITPROS: *Petroleum, Sources, Fluid flow, *Water, *Natural gas, Gases, Geochemistry, Hydrostatic pressure, Pressure.

The gasified waters, because of the isothermic expansion of gas, possess a raising power in addition to the hydrostatic pressure. The raising power of the gas increases with the increase of the discharge of the well and of the gas-saturation of the utilized waters. The losses on the proper velocity of the gas increase in proportion to the area of the cross-section of the well. In gaseous wells, up to the depth of saturation, the increase of the hydrostatic pressure is expressed by a curve; its tangents form angles with the axis of ordinate, the tangents of which, in a first approximation, characterize the weights by volume of the gas-water mixture on the depth corresponding to the point of tangency. From the depth of the saturation, the increase of the pressure proceeds, as in usual water wells, according to the law of the straight line. A substantial influence on the character of the wells is had by the natural gases, which in a free state are within the limits of the water-supplying horizon (gaseous caps); pulsation, as a particular case of the character of gasified wells, is the result of the loss of

the equilibrium between the discharges of water and the gas. Many non-self-flowing gasified wells became self-flowing after their excitement by means of pumping out. The gasified self-flowing wells have a critical discharge; at the out-flow of the water below the critical discharge, these wells stop their functioning.

Bulashevich, Yu. P.
THE THEORY OF NEUTRON LOGGING AS APPLIED TO PROSPECTING FOR COAL AND OIL (Teoriya Neitronnogo Karottazha v Primenenii k Razvedke Neftyanykh i Ugol'nykh Mestorozhdenii). [1962] [52]p. (foreign text included) 17 refs.
Order from OTS or SLA $5.60 62-14601

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1948, v. 12, no. 2, p. 155-168.

DESCRIPTORS: *Well logging, Theory, *Geophysical prospecting, *Coal, *Oil, Neutron cross sections, Thermal neutrons, Fast neutrons, Rock, Minerals, Geology.

The author calculates the neutron constants of some rocks and minerals on the basis of experimentally known values of effective cross-sections for the processes of dispersion and capture of slow neutrons by nuclei. The problem of diffusion of slow neutrons in dispersing and absorbing media is solved for a point source. Calculations are made of the influence of the retardation of fast neutrons. It is shown that the relative characteristic of rocks with neutron logging depends substantially on the dimensions of the neutron probe and may be reversed. An analogous reversal of the characteristic may take place with the neutron gamma-ray logging. The developed theory lends a scientific basis to the methods of neutron logging already used in practice and indicates ways for its most effective application in prospecting for coal and oil. (Author)

Bulygin, V. Ya.
THE DETERMINATION OF WATER SATURATION AND OIL RECOVERY OF RESERVOIRS. [1962] 7p.
Order from ATS $10.00 ATS-47N58R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 8, p. 75-81.

DESCRIPTORS: Dams, *Oils, Recovery, Water.

Csath, Bela.
WATER RESEARCH IN MONGOLIA. 6 July 62[17]p. JPRS: 14394.
Order from OTS or SLA $1.60 62-25606

Trans. of Banyaszati Lapok (Hungary) 1962 v. [17] (95) p. 54-59.

DESCRIPTORS: Water, *Water supplies, *Hydrology, *Well drilling, Geological survey, *Mongolia.

Glogoczowski, Jan J.
THE ROLE OF MICROINDICATIONS OF OIL-BEARING IN COMPLEX GEOCHEMICAL SURVEYS. [1962] [16]p. 26 refs.
Order from SLA $1.60 62-14599

Trans. of Nafta (Poland) 1956, v. 12, no. 1, p. 4-8.

DESCRIPTORS: Geology, *Geochemistry, *Geophysical prospecting, Plants, *Microorganisms, Hydrocarbons, Petroleum.

Goguel, Jean.
TECTONICS, tr. by Hans E. Thalmann. June 62, 384p. 52 refs.
Order from W. H. Freeman and Co., 660 Market St., San Francisco, 4, Calif. $10.00

Trans. of mono. Traite de Tectonique, Paris, 1952.

DESCRIPTORS: *Geophysics, *Terrain, *Geogony, Morphology, Stratification, Deformation, Gravity anomalies, Mountains, Volcanoes, Earthquakes, Ocean bottom, Rock, Granite, *Geology.

Kara-Murza, E. N.
PALYNOLOGICAL BASIS OF STRATIGRAPHICAL SUBDIVISION OF THE MESOZOIC DEPOSITS OF THE KHATANGA DEPRESSION. 30 Oct 61, 414p. (22 plates omitted) 86 refs.
Order from OTS or SLA $22.25 62-23495

Trans. of [Nauchno-Issledovatel'skii Institut Geologii Arktiki. Trudy] (USSR) 1960, v. 109.

DESCRIPTORS: Geology, Geological survey, *Spores, *Pollen, Deposits.

Data are presented on the composition of spore-pollen complexes from Mesozoic deposits of the Khatange depression and their stratigraphic role.

Krejci-Graf, Karl.
DIAGNOSTICS OF THE ORIGIN OF PETROLEUM. I. ORIGIN OF THE MOTHER SUBSTANCE OF PETROLEUM: TRANSFORMATION OF THE ORGANIC SUBSTANCE (Diagnostik der Herkunft des Erdöls. I. Herkunft der Muttersubstanz des Erdöls. -- Umbildung der Organischen Substanz). [1962] [35]p. (foreign text included) 39 refs.
Order from SLA $3.60 62-16422

Trans. of Erdöl und Kohle (West Germany) 1959, v. 12, no. 9, p. 706-712.

DESCRIPTORS: *Petroleum, Geology, Paleoecology, Hydrocarbons, Rock, Deposits, Organic materials, Coal, Peat, Geochemistry, Mining engineering, Geophysical prospecting.

Krejci-Graf, Karl.
DIAGNOSTICS OF THE ORIGIN OF PETROLEUM. II. INDICIA FOR THE ORIGIN OF PETROLEUM (SUMMARY AND CONCLUSION) (Diagnostik der Herkunft des Erdöls. --Zusammenfassung und Schlusswort). [1962] [52]p. (foreign text included) 128 refs.
Order from SLA $5.60 62-16434

Trans. of Erdöl und Kohle (West Germany) 1959, v. 12, no. 10, p. 805-815.

DESCRIPTORS: *Petroleum, Geology, Paleoecology, Rock, Deposits, Organic materials, Coal, Peat, Minerals, Geochemistry, Geological survey, Uranium, Mining engineering.

Mineralogy

Gerling, E. K., Levskii, L. K., and Afanas'eva, L. I.
ON FINDING Ar^{38} IN MINERALS CONTAINING POTASSIUM. [1961] 4p. 2 refs. MDF G-110.
Order from OTS $0.50 62-11195

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1956, v. 109, no. 4, p. 813-815.
Another trans. is available from SLA as R-4784.

DESCRIPTORS: *Geochemistry, *Argon, Isotopes, Radioactive decay, *Potassium, Mica, Minerals.

When studying the isotopic composition of argon liberated from various potassium minerals, it was discovered that the ratio of the Ar^{36}/Ar^{38} isotopes was totally different in this case than for atmospheric argon. The isotopic shift was particularly large for the argon liberated from the old minerals while this phenomenon was not detected for the majority of young minerals. In several minerals containing various amounts of chlorine but which were of the same age the amount of Ar^{38} was independent of the Chlorine content and, consequently, the excess Ar^{38} contained in these minerals could not be related to the nuclear reactions of the α-particles with the Cl^{35}. In several micas which had been in contact with uranium minerals from the time of their formation the amount of Ar^{38} contained in these micas was, on the average, the same as in the minerals which had not been in contact with uranium ores. Hence, the accumulation of Ar^{38} in potassium minerals is not related to the $K^{41}(n, \alpha)Cl^{38} \xrightarrow{\beta^-} Ar^{38}$ nuclear reaction. The presence of Ar^{38} in potassium minerals is related to the disintegration of the long-lived K^{38} isomer which occurs in potassium in very small quantities. The Ar^{38} content, in general, increases as the amount of potassium in the minerals increases. The accumulation of Ar^{38} in potassium minerals is best explained by the disintegration of the long-lived K^{38} isomer which is present in the amount of 1×10^{-10} gm/gm in potassium.

Sindeeva, N. D.
THE MINERALOGY, TYPES OF DEPOSITS AND MAIN FEATURES OF THE GEOCHEMISTRY OF SELENIUM AND TELLURIUM. 23 Jan 62 [369]p. (89 figs. omitted) 125 refs.
Order from OTS or SLA $21.00 62-23746

Trans. of mono. [Mineralogiya, Tipy Mestorozhdenii i Osnovnye Cherty Geokhimii Selena i Tellura] Moscow, 1959, [254p.].

DESCRIPTORS: *Tellurium, *Selenium, Geochemistry, Deposits, Minerals, Rare earth elements, Geology.

Oceanography

Lappo, S. D.
ON THE DISTRIBUTION OF REPRESENTATIVE MARINE HYDROLOGICAL STATIONS IN THE SOVIET ARCTIC. 5 Jan 62 [10]p. AID Rept. 62-1; AD-271 543.
Order from OTS or SLA $1.10 62-19120

Abstract trans. of Problemy Arktiki (USSR) 1959, no. 7, p. 115-124.

DESCRIPTORS: *Hydrology, *Oceanographical charts, Arctic regions, Oceans, Kara sea.

Vladimirov, O. A.
THE MEAN-SQUARE VARIANCE OF SEA LEVEL AND ITS RELATION TO CERTAIN OCEANOLOGICAL CHARACTERISTICS (Srednaya Kvadraticheskaya Velichina Izmenchivosti Urovnya Svyaz' Ee s Nekotorymi Okeanologicheskimi Kharakteristikami). Apr 62 [14]p. 12 refs. RTS 2095.
Order from OTS or SLA $1.60 62-24376

Trans. of Gosud[arstvennyi] Okean[ograficheskii] Institut. Trudy (USSR) 1961, v. 64, p. 118-127.

DESCRIPTORS: *Oceanography, Oceanographical data, *Sea water, Ice, Meteorology, Diurnal variation, Periodic variations, Analysis of variance, Errors, Barents Sea, Baltic Sea.

The paper analyses the variance of the mean-square error of sea-level observations. The diurnal and seasonal pattern of this quantity are established, together with its long-term variance. By detailed examination of the long-term pattern of the rms error it is possible to determine some regularities in its variation and its bearing on the pattern of ice-formation in different areas of the ocean. The author also proposes certain recommendations for using the rms error to determine the number of years over which observations should be taken to obtain a given rms error of the arithmetic mean. (Author)

Physics of the Atmosphere

Grigauz, K. I.
ROCKET MEASUREMENTS OF THE ELECTRON CONCENTRATION IN THE IONOSPHERE USING AN ULTRA-SHORTWAVE DISPERSION INTERFEROMETER. [1960] 6p. 8 refs. MDF G-169.
Order from OTS $0.50 62-11450

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1958, no. 1, p. 62-66 (first pub. in Akademiya Nauk SSSR. Doklady, 1958, v. 120, no. 6, p. 1234-1237).
Other translations are available from OTS $0.50 as 59-11940, TG 230-T72, 12 Mar 59 [8]p.; from OTS $0.50 as 59-11375, JPRS(DC)-L-1207, 11 June 59, 7p. and from LC or SLA mi$1.80, ph$1.80 as 59-19137, DSIR LLU M. 256 [1959] [4]p.

DESCRIPTORS: *Interferometers, *Ionosphere, Analysis, Electrons, Density, Sounding rockets.

Analysis of preliminary rocket sounding data obtained from altitudes up to 473 kilometers indicates that there is no sharply defined E-layer. Altitude distribution curves of electron densities based on data gathered from a number of rocket flights at different times are compared.

Gringauz, K. I., Rudakov, V. A., and Kaporskii, A. V.
INSTRUMENTATION FOR ROCKET MEASUREMENTS OF THE DENSITY OF FREE ELECTRONS IN THE IONOSPHERE. July 62 [8]p. 5 refs.
Order from ARS in Its Journal, v. 32, no. 7, $3.00

Trans. of [Iskusstvennye Sputniki Zemli] (USSR) 1961, v. 6, p. 33-47.

DESCRIPTORS: *Rocket research, *Ionosphere, *Electrons, Density, Measurement, Instrumentation, *Radio equipment, Radio transmitters, Radio receivers, Antennas, Recording systems, Oscillographs.

Gurevich, A. V.
PERTURBATIONS IN THE IONOSPHERE CAUSED BY A MOVING BODY [Ovozmushcheniyakh v Ionosfere Vyzyvaemykh Dvizhuschimsya Telom] tr. by Astrid Werner. July 62 [7]p. 3 refs.
Order from ARS in Its Journal, v. 32, no. 7, $3.00

Trans. of [Nauchno-Issledovatel'skii Institut Zemnogo Magnetizma, Ionosfery i Rasprostraneniya Radiovoln]. Trudy (USSR) 1960, v. 17(27) p. 173-186.
An unedited rough draft trans. is available from OTS or SLA $2.60 as 62-15178, FTD-TT-61-143, 20 Nov 61 [23]p.

DESCRIPTORS: *Ionosphere, *Ionospheric disturbances, Bodies of revolution, *Rocket research, *Satellite vehicle research, Ions, Particles, Electrons, Electric fields, Density, Plasma physics, Spheres, Superaerodynamics, Radio waves, Ionospheric propagation, Propagation.

Istomin, V. G.
ALTITUDE VARIATIONS OF POSITIVE ION CONCENTRATIONS ACCORDING TO MASS SPECTROMETER DATA FROM THE THIRD SPUTNIK, tr. by Astrid Werner. July 62 [3]p. 7 refs.
Order from ARS in Its Journal, v. 32, no. 7, $3.00

Trans. of [Iskusstvennye Sputniki Zemli] (USSR) 1961, v. 6, p. 127-131.

DESCRIPTORS: Oxygen, *Ions, Electrons, Density, Measurement, *Satellite vehicle research, Mass spectrometers, *Ionosphere, Analysis, Rocket research.

Khrgyan, A. Kh.
ATMOSPHERIC OZONE: RESULTS OF IGY WORK IN THE USSR CONFERENCE 28-31 OCT 59. RESULTS AND RESOLUTIONS. 13 Apr 62 [299]p. 182 refs.
JPRS: 13445.
Order from OTS or SLA $18.00 62-23986

Trans. of mono. Atmosfernyi Ozon: Rezul'taty Rabot Mezhdunarodnogo Geofizicheskogo Goda v SSSR, Konferentsiya, 28-31 Okt 59 Goda, Doklady i Rezolyutsii, Moscow, 1961.

DESCRIPTORS: *Atmosphere, *Ozone, Spectrographic analysis, *Sounding rockets, *Photoelectric effect, Chemical analysis, *Arctic regions, Gas detectors, *Aerosols, Temperature, Periodic variations.

Contents:
Present-day tasks of the study of atmospheric ozone, by A. Kh. Khrgyan
Results of measurements of the vertical distribution of atmospheric ozone made in a rocket, by L. A. Kudryavtseva
Photoelectric spectrometer for observation of atmospheric ozone, by V. A. Iozenas and A. P. Kuznetsov
On the question of the determination of ozone content by the chemical method, by A. S. Britaev
Some results of observations on the ozone in the Arctic in 1958, by G. U. Karimova
Annual range of overall content of atmospheric ozone over Dixon Island and its connection with various meteorological conditions, by T. S. Gol'm
Observation of the vertical distribution of the ozone in the atmosphere above Moscow, by A. P. Kuznetsov and others
Variations in the overall ozone content according to observations in Abastumani from July 57 to June 59, by Sh. M. Chkhaidze
On systematic errors in filter ozonometry, by L. G. Bol'shakova and others
On certain types of photoelectric ozonometers, by A. L. Osherovich and S. F. Rodionov
The hypothesis of the aerosol origin of the atmospheric ozone, by V. D. Reshetov
The temperature range of the atmospheric ozone according to ground spectroscopic observations, by R. S. Steblova
A method of calculating the overall atmospheric ozone content for instruments with light filters, by G. P. Gushchin
Laws governing the horizontal distribution and fluctuations in time of the atmospheric ozone, by G. P. Gushchin
On the connection of the atmospheric ozone with meteorological conditions, by A. S. Britaev and A. P. Kuznetsov
On two important factors of ozonometric instruments, by G. P. Gushchin
On the diurnal range of the atmospheric ozone, by A. Kh. Khrgyan and G. I. Kuznetsov
Results of a comparison of various ozonometric instruments carried out in the imeni A. I. Voeikogo Main Geophysical Observatory, by A. A. Znamenskii
Conference on Atmospheric Ozone, Moscow, 28-31 Oct 59: resolution.

Paszynski, J.
AIR POLLUTION AND SUNSHINE IN THE INDUSTRIAL REGION OF UPPER SILESIA (SUMMARY) (Legszennyezodes es Napsugarzas a Elsoszileziai Iparvideken). 21 Apr 61 [4]p. JPRS: 9060.
Order from OTS or SLA $1.10 62-19395

Trans. of Idojaras (Hungary) 1960, v. 64, no. 3, p. 143.

DESCRIPTORS: *Atmosphere, *Contamination, *Spectrographic analysis, Industry.

ENGINEERING

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNAL: MINING, 1961, NO. 12. 11 June 62 [13]p. JPRS: 14074.
Order from OTS or SLA $1.60 62-25191

Trans. of selected abstracts from Referativnyi Zhurnal. Gornoe Delo (USSR) 1961, no. 12.

DESCRIPTORS: *Mining engineering, Abstracting, Minerals, Coal, Machines, Conveyors, Compressors.

MECHANIZATION OF ENGINEERING AND CONTROL OPERATIONS. 28 Nov 60 [10]p. JPRS:4230.
Order from OTS or SLA $1.10 62-23487

Trans. of Planovoe Khozyaistvo (USSR) 1960, no. 9, p. 92-95.

DESCRIPTORS: Industrial production, *Automation, *Engineering, Machines, *Control systems, *Digital computers, Computers.

Dobrolenskii, Yu. P., Miloslavov, B. A., and Borisov, D. P.
A DEVICE FOR MEASURING AND RECORDING FLUCTUATIONS OF WIND VELOCITY AT THE FLIGHT ALTITUDE OF AN AIRCRAFT. 16 Jan 62 [4]p. FTD-TT-61-247; AD-271 826.
Order from OTS or SLA $1.10 62-19252

Unedited rough draft trans. of Soviet patent 134902, 20 Jan 60.

DESCRIPTORS: Flight instruments, Wind, Pressure gages, *Airspeed indicators, Design.

The device for measuring and recording the fluctuations of wind velocity at the flight altitude of an aircraft, containing a dynamic pressure sensor, an electric transducer, amplifier, and recorder, is distinguished by the fact that, in order to eliminate the influence of the dynamic pressure of the unperturbed flow on the results of the measurements, an electric motor with a reducing gear coupled with the part of the transducer which is not coupled with the dynamic pressure sensor is connected to the amplifier output via a switch. (Author)

Lindblom, Carl Paul.
PROCESS AND FEED MECHANISM FOR MACHINE FOR PRODUCTION OF LATH REINFORCED ROLL ROOFING, tr. by J. R-P. 1 June 62, 6p. (3 figs. omitted).
Order from OTS or SLA $1.10 62-25678

Trans. of Danish patent 71,630, cl. 55f/4, pat. from 8 June 46, granted 9 Oct 50, pub. 23 Oct 50 (priority claimed: Sweden, from 27 Mar 41)

DESCRIPTORS: *Roofs, *Materials, Reinforcing, Materials, Bituminous coatings, Coatings, Production, Machines, Feed mechanisms.

A suitable impregnated web consisting of a fibrous material is coated on one side with bitumen, whereupon the web is moved towards a conveyor belt and between a roll that determines the distance separating the laths and a pressure roll that presses a series of laths that are delivered in close contact with one another onto a bitumen-coated surface, separated by a determined distance. Before, during or after the delivery of the laths, the web surface not to be covered with lath is coated with bitumen and thereafter coated with a layer of gravel, sand, brick dust, pulverized cinders or sawdust. The distance between the laths on the lath reinforced roofing is produced by means of a spacing roll. When the laths pass said roll, there is formed between the short sides of the laths a wedge-shaped gap whose wide side is towards the web and into which bitumen from the web is pressed. (Author)

Chemical Engineering

METHOD FOR THE PREPARATION OF DICARBOXYLIC ACIDS. [1962] 8p. 8 refs.
Order from OTS or SLA $1.10 62-14806

Trans. of Dutch patent application 205759, by Lonza Elektrizitätswerke und Chemische Fabriken AG. (Switzerland) appl. 26 Mar 56, pub. 17 July 61, priority of 29 Mar 55 on: Switzerland, for claims 1, 3-4, as far as acetylene is converted in the presence of a cobalt-carbonyl as catalyst, and for claim 2, and from 25 Feb 56 on, for the rest of the patent.

DESCRIPTORS: *Carboxylic acids, Synthesis, Colbalt catalysts, Iron catalysts, Acetylenes.

A process is proposed for the preparation of dicarboxylic acids by reacting alkynes or aralkynes with carbon-monoxide and water in the presence of cobalt- or iron-containing catalysts and of an organic solvent at elevated temperatures and pressure. The process is characterized in that the reaction takes place in a vessel with a cobalt- or iron-carbonyl present and at a temperature of 80° to 140°C and a pressure of 200 to 500 in a neutral or acid medium in homogenous liquid phase.

METHOD FOR THE PRODUCTION OF WATER-SOLUBLE AND EMULSIFIABLE ELECTROLYTE-STABLE "DUBBING" AGENTS. [1962].
Order from K-H $7.50 K-H-11033b

Trans. of German patent 1,068,251 [pub. 1959].

DESCRIPTORS: *Coatings, Colloids, *Electrolytes, Stability.

Bashkirov, A. N., Chertkov, Ya. B., and Zil'berg, G. A.
PROCESS FOR THE PRODUCTION OF ALCOHOLS BY THE OXIDATION OF HYDROCARBONS. [1962] 2p.
Order from ATS $3.50 ATS-83P61R

Trans. of Soviet Patent 105, 932, filed 3 Apr 48 under no. 362, 445.

DESCRIPTORS: *Alcohols, Production, *Hydrocarbons, Oxidation.

Bashkirov, A. N., Kamzolkin, V. V. and others.
PROCESS FOR THE PRODUCTION OF HIGH-MOLECULAR ALCOHOLS BY THE OXIDATION OF HYDROCARBONS. [1962] 2p.
Order from ATS $3.50 ATS-82P61R

Trans. of Soviet patent 106, 914, filed 28 Oct 53, under no. 429, 780.

DESCRIPTORS: *Alcohols, Production, *Hydrocarbons, Oxidation.

Belyaev, D. V.
THE METALLURGY OF TIN, tr. ed. by H. T. Protheroe. Oct 62, approx. 110p.
Order from PP approx. $6.50

Trans. of mono. [Metallurgiya Olova; Uchebnik dlya Podgotovki Kvalifitsirovannykh Rabochikh na Proizvodstve, Moscow, 1960, 94p.].

DESCRIPTORS: *Tin, *Smelting, Slags, Metallurgy.

Flax, Valer.
RECEPTACLE FOR LIQUIDS, MADE OF THIN, ELASTIC BONDABLE MATERIAL, PROCESS AND WELDING JAWS FOR THE PRODUCTION OF SUCH A RECEPTACLE, tr. by P. C. C. 13 July 62, 9p. (12 figs. omitted).
Order from OTS or SLA $1.10 62-32220

Trans. of German Auslegeschrift 1, 056, 953, cl. 64a, 1/01, internat. cl. B 67 b, appl. 26 Aug 57, announced and Auslegeschrift pub. 6 May 59 (appl., France, 30 Aug 56).

DESCRIPTORS: *Plastics, *Containers, *Liquids, Welding

The invention consists in providing a separation between the outlet area or portion of the receptacle and the receptacle chamber proper, which are connected only by one or several passages used as discharge openings. The cross section of said passages is sufficiently small so that, considering the surface tension of the enclosed liquid, an unintentional discharge of the liquid upon opening of the receptacle is avoided. (Extract)

Grubitsch, Heribert.
METHOD FOR THE PREPARATION OF PURE CHLORINE DIOXIDE. [1962] 3p.
Order from OTS or SLA $1.10 62-14756

Trans. of German patent specification 1, 100, 002 G 28120 IVa/12i, appl. 9 Oct 59, appl. pub. and spec. issued 23 Feb 61.

DESCRIPTORS: *Synthesis, *Chlorine compounds, *Dioxides.

The method is characterized by the fact that purified, bromine-free chlorine dioxide is mixed with carbon dioxide, condensed by cooking and the carbon dioxide allowed to boil off from the condensate at temperatures of 0 to 50°C, preferably 20 to 30°C.

Kagan, D. A. and Kaganer, T. A.
HYDRAZINE TREATMENT OF FEEDWATER FOR VERY HIGH PRESSURE BOILERS. [1962] [7]p. C. E. Trans. 2209; [DSIR] NLL M. 6325.
Order from OTS or SLA $1.10 62-25957

Trans. of Teploenergetika (USSR) 1960, v. 7, no. 11, p. 46-48.
Another trans. is available from OTS or SLA $1.10 as 61-27538, DSIR LLU M. 3106 [1961] [10]p.

DESCRIPTORS: *Feed water, *Hydrazines, Chemical effects, Boilers, Pressure.

For abstract see Technical Translations 8: 48, 1962.

Lazarev, A. I.
RECOVERY OF RHENIUM FROM TUNGSTEN-RHENIUM ALLOYS, tr. by J. B. 24 Apr 62, 5p. 6 refs.
Order from OTS or SLA $1.10 62-24523

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1960, v. 33, no. 2, p. 468-469.

DESCRIPTORS: *Tungsten alloys, *Rhenium alloys, Separation, *Rhenium, Recovery.

A yield higher than 99% is obtained by the proposed methods. (Author)

Marsal, Dietrich.
THE MATHEMATICAL TREATMENT OF WATER FLOODING OF PETROLEUM RESERVOIRS (Die Mathematische Behandlung der Verwässerung von Erdöllagerstatten). Lecture presented to the German Association for Petroleum Science and Coal Chemistry (annual meeting) Berlin, 11 Oct 57. [1962] [7]p. (foreign text included).
Order from SLA $1.10 62-16472

Trans. of Erdöl und Kohle (West Germany) 1957, v. 10, no. 12, p. 825-826.

DESCRIPTORS: *Petroleum, *Hydraulic reservoirs, *Water injection, Numerical analysis.

Mascherpa, Guy.
PREPARATION OF ANHYDROUS PERCHLORIC ACID. [1962] 3p. (figs. refs. omitted).
Order from SLA $1.10 62-14450

Trans. of Académie des Sciences [Paris]. Compt[es] Rend[us] (France) 1961, v. 252 [no. 12] p. 1800-1802 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Perchloric acid, Anhydrides, Synthesis, *Distilling plants.

An apparatus is described that permits the preparation, with safety, of the completely discolored, anhydrous acid at a rate of 60 grams per hour. It has been in operation for a year.

Schwarz, N.
THE PRODUCTION OF HIGH-VISCOSITY CRUDE OILS (Uber die Forderung Viscoser Rohöle). [1962] [25]p. (foreign text included) 16 refs.
Order from SLA $2.60 62-16477

Trans. of Erdöl und Kohle (West Germany) 1956, v. 9, no. 8, p. 511-515.

DESCRIPTORS: *Oils, *Petroleum, Production, Viscosity, Economics.

Electrical and Electronic Engineering

DEVICE FOR MEASURING TRANSISTOR PARAMETERS. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9504, 24 July 62, by Hitachi Ltd.

DESCRIPTORS: *Transistors, Phase measurement.

DEVICE PROVIDED WITH TRANSISTOR AMPLIFIER AND BAND-FILTER. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9162, 24 July 62, by N. B. Phillips.

DESCRIPTORS: *Transistor amplifiers, *Band-pass filters, Amplifiers.

IMPROVEMENTS IN TRANSISTOR AMPLIFIER. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9158, 24 July 62, by Yokogawa Electric Co., Ltd.

DESCRIPTORS: *Transistor amplifiers, Design, Amplifiers.

MAGNETIC RECORDER DRIVE AND GUIDE, tr. by F. H. B. 8 June 62, 5p. (2 figs. omitted).
Order from OTS or SLA $1.10 62-25676

Trans. of Belgian patent 532,316, by Ateliers de Constructions Electriques de Charleroi, S. A., appl. 5 Oct 54, granted 30 Oct 54, pub. 31 Jan 58 (priority claimed: France, based on appl. filed 31 Oct 53, statement of applicant).

DESCRIPTORS: *Magnetic recording systems, Magnetic drives, Magnetic guidance, Design.

A drive and guide for the magnetic heads of a recorder are proposed. The support of the magnetic heads is guided by a smooth shaft and moved by a drive element. The drive element is connected on one side to a perforated tape driven by a toothed drum and on the other side to a cable supported by at least one loose pulley. The drive element, the perforated tape and the cable form a closed path. The force necessary for tensioning said perforated tape is supplied by a spring mounted along the path constituted by the perforated tape, the cable and the drive element.

METHOD OF MANUFACTURING JET-PLATE FOR MICRO-ALLOY TRANSISTOR. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6860, 3 July 62, by Philco Corp.

DESCRIPTORS: *Transistors, Alloys, Production.

METHOD OF MANUFACTURING SWITCHING TRANSISTOR. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8762, 20 July 62, by N. B. Phillips.

DESCRIPTORS: *Transistors, *Switching circuits.

MODULATOR CIRCUIT COMPRISING FOUR DIODES. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8415, 17 July 62, by Siemens und Halskie Aktiengesellschaft (West Germany).

DESCRIPTORS: *Modulators, *Circuits, Diodes.

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION, RADIO ENGINEERING SERIES, 1961, VOL. 4, NO. 5. May 62 [286]p. JPRS: 13687.
Order from OTS or SLA $18.00 62-24723

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiotekhnika (USSR) 1961, v. 4, no. 5, p. 511-626.

DESCRIPTORS: *Electrical engineering, *Radio equipment, *Feedback oscillators, Harmonic analysis, Narrowband, Linear systems, Inductance, *Coils, *Microwave oscillators, Amplifiers, *Signal to noise ratio, *Relaxation oscillators, Excitation, *Transistors, *Transformers, Couplings, Frequency analyzers, Electrostatic capacitance, Magnetic recording systems, *Signal generators, Pulse transformers, *Ultra high frequency, Scattering, *Printed circuits, Partial differential equations, Heat transfer, *Direction finding, *Piezoelectric effect, Resistance, *Telegraph signals, Interference.

Contents:

Action of a small harmonic signal on narrow-band self-oscillating systems with delayed feedback, by Malyshev, V. A.
Use of ideal elements in equivalent circuit of linear transfer two-port network, by Velichko, Yu. T.
Production of a linearly-varying current in self-induction coils, by Frolkin, V. T.
Possibility of using microwave self oscillators as regenerative amplifiers, by Lebedev, I. V. and Chen Chung-Mou
Distribution of the maximum values in the realizations of fluctuations of finite duration, by Tikhonov, V. I.
Relaxation generator using junction transistor with close transformer coupling, by Kulya, V. I.
Controllable p-n junction capacitance as a frequency-detector element, by Servinskii, E. G.
Use of magnetic recording to generate electric signals of complicated form, by Naidenov, A. I.
Oscillatory demagnetization of a core of a pulse transformer, by Fuks, L. B.
Approximate formula for estimating coherently-scattered fields in long-distance UHF propagation, by Ponomarenko, L. M.
Analytic method of heat calculations for printed circuits, by Ermolaev, Yu. P.
Phase radio direction finder with reading independent of the amplitude ratio, by Belavin, O. V.
Coefficient of reflection from conical segment of a helical line, by Sovetov, N. M.
Piezoelectric generator with shock excitation and feedback on a subharmonic, by Plonskii, A. F.
Matching stages with low output resistance, by Svechnikov, S. V. and Petrenko, A. I.
Interference immunity of frequency-type radio telegraphy under random changes in the signal frequency, by Zyuko, A. G.

SCIENCE OF TELECOMMUNICATIONS, 1959, NO. 7: SELECTED ARTICLES. 25 Jan 62 [99]p.
FTD-TT-61-25; AD-271 863.
Order from OTS or SLA $8.60 62-19630

Unedited rough draft trans. of Tien Hsin K'o Hsüeh (Chinese People's Republic) 1959, no. 7, p. 1-13, 18-22, 46, 52-62.

DESCRIPTORS: *Communication systems, Pulse communication systems, Radio communication systems, Pulse modulation, Amplitude modulation, China, Coding, Automatic, *Remote control systems, Radio repeaters, Radio waves, Radio signals, Radio relax systems, Telegraph equipment, Telegraph signals, *Telegraph systems, Phase distortion, Analysis, Tests, Transistors, *Speech transmission, *Telephone communication systems, Electronic circuits, Telephone signals.

Contents:

A general discussion of pulse-code modulation, by Tuan-jang Wang
New automatic remote-control system for unattended repeater stations of long-distance trunk lines, by Ch'en Ho-ch'iao and Yang T'ung-chou
Analysis and testing of distortion tolerance in telegraph receivers, by Chang Feng-lou
Transistor applications in communications, I, by Shen Kuang-ming
Main elements of the electric circuit, by Ch'en-hu and Hung Fu-ming.

SPIRAL-QUAD COMMUNICATION CABLE WITH CORD-PAPER INSULATION STATE STANDARD 5008-49. 18 July 62 [18]p. JPRS: 14503.
Order from OTS or SLA $1.60 62-25976

Trans. of mono. Kabeli, Provoda i Shnury Elektricheskie Izd. Ofitsial'noe (Electric Cables, Wires, and Cords. Official Publication) Moscow, 1960, p. 221-230.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-17673 [1960] 9p.

DESCRIPTORS: *Cables, *Standards, Electric insulation, Insulating materials, Communication equipment.

For abstract see Technical Translations 4: 399-400, 1960.

TRANSISTOR A.C. AMPLIFIER. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8413, 17 July 62, by N. B. Phillips.

DESCRIPTORS: *Transistor amplifiers, Alternating current, Amplifiers.

TRANSISTOR AMPLIFIER. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9163, 24 July 62, by Hitachi Ltd.

DESCRIPTORS: *Transistor amplifiers, Amplifiers, Transistors.

TRANSISTOR CIRCUIT. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8412, 17 July 62, by Nihon Electric Co.

DESCRIPTORS: *Transistors, Circuits.

TRANSISTOR CIRCUIT HAVING OUTPUT TRANSFORMER. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8414, 17 July 62, by Siemens und Halskie Aktiengesellschaft (West Germany).

DESCRIPTORS: *Transistors, Circuits, *Transformers.

TRANSISTOR GATE CIRCUIT. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9157, 24 July 62, by N. B. Phillips.

DESCRIPTORS: *Transistors, Triggered gates, Circuits.

TRANSISTOR PRESSURE-RESISTIVE AMPLIFIER. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9159, 24 July 62, by Sony Corp.

DESCRIPTORS: *Transistor amplifiers, Pressure, Resistance. Amplifiers.

TRANSISTOR TELEPHONE LINE SWITCHING CIRCUIT. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-7827, 10 July 62, by Iwasaki Tsushinki K. K.

DESCRIPTORS: *Transistors, *Telephone lines, *Switching circuits.

TRANSISTOR TIME LIMITER CIRCUIT. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-7805, 10 July 62, by Fuji Tsushinki Seizo K. K.

DESCRIPTORS: *Transistors, *Timing circuits.

Alekseev, K. B. and Voskresenskii, V. V.
INCREASING THE ACCURACY OF STABILIZATION SYSTEMS, 22 Jan 62 [19]p. 5 refs. MCL-1356; AD-270 780.
Order from OTS or SLA $1.60 62-15834

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Elektromekhanika (USSR) 1960 [v. 3] no. 9, p. 62-72.

DESCRIPTORS: Servo systems, Servomechanisms, Control systems, Automatic, *Stabilization systems, Errors, Reduction, Transients, Mathematical analysis.

An analysis is made of a specific system of indirect stabilization. Actual possibilities are cited for decreasing the error in stabilization using the sinusoidal law of vibration of the base. The influence is examined of the moment of inertia of the object and drive on the steady-state error of the system. Recommendations are given for the selection of the amplification factor of the system assuring a transient condition when controlling the action. It is established that at a low moment of inertia of the object and drive an increase in the accuracy is limited by the selection of the corresponding amplification factor from the condition of the system's stability. In this case the use of a flexible coupling for the disturbance substantially lowers the stabilization error and can be recommended for use in practice.

Biryukova, A. I., Orlovich, T. M., and Solomonik, S. S.
CHARACTERISTICS OF WIRES WITH OXIDE INSULATION USED FOR WINDINGS. 18 Jan 62 [18]p. 6 refs. FTD-TT-61-126; AD-270 773.
Order from OTS or SLA $1.60 62-19651

Unedited rough draft trans. of Vestnik Elektropromyshlennosti (USSR) 1961 [v. 32] no. 1, p. 25-31.

DESCRIPTORS: *Wire, Aluminum wire, Electric insulation, Thermal insulation, Oxides, *Coatings, Films, *Dielectric films, Manufacturing methods, Electrochemistry, Oxidation, Anodes (Electrolytic cells), Dielectric properties, Mechanical properties, Porosity, Structures, Thickness, Ceramic materials, Aluminum compounds, Oxides, Impregnation, Varnishes.

Characteristics are given of aluminum wires with oxide insulation produced by anodizing for use at 400-500°C.

Bogoroditskii, N. P. and Pasynkov, V. V.
MATERIALS IN RADIO ELECTRONICS. 30 Jan 62 [474]p. 25 refs. FTD-TT-61-101; AD-275 736
Order from OTS or SLA $23.50 62-25411

Unedited rough draft trans. of mono. Materialy v Radioelektronike, Moscow/Leningrad, 1961, 352p.

DESCRIPTORS: Electronic equipment, Radio equipment, *Materials, *Dielectrics, Electrical properties, Mechanical properties, Chemical properties, Plastics, Resins, Rubber, Cellulose, Silicone resins, Ceramics, Piezoelectric crystals, Electrets, Mica, *Conductors, *Resistors, *Semiconductors, Thermistors, Variable resistors, Valves, Diodes, Transistors, Photoelectric cells, *Magnetic materials.

Contents:
Electrical properties of dielectrics
The mechanical and chemical properties of dielectrics
Organic dielectrics
Inorganic dielectrics
Metallic conductors
Electronic semiconductors
Magnetic materials.

Druzhinin, G. V.
TIME RELAYS, tr. by J. Yeoman. 1961, 1v.
Order from PP 15s

Trans. of mono. [Rele Vremeni, Moscow/Leningrad, 1959].

DESCRIPTORS: *Relays, *Time delay relays.

Efimov, E.
A MOTOR CONNECTED TO THE SUN. 5 Feb 62 [4]p. FTD-TT-61-399; AD-271 829.
Order from OTS or SLA $1.10 62-19633

Unedited rough draft trans. from Sovetskaya Kirgiziya (USSR) 1961, 12 Nov, p. 4.

DESCRIPTORS: Solar energy, Thermal radiation, *Solar cells, Thermoelectricity, Electric power production, Power supplies.

Fabrikov, V. A.
A NEW METHOD OF SHF AMPLIFICATION BY FERRITES. 20 Feb 62 [20]p. 10 refs. FTD-TT-62-76; AD-273 882.
Order from OTS or SLA $1.60 62-25541

Unedited rough draft trans. of #Radiotekhnika i Elektronika (USSR) 1961, v. 6, no. 10, p. 1707-1717.

DESCRIPTORS: *Power amplifiers, Superhighfrequency, *Ferrites, Magnetic fields, Polarization, Mathematical analysis, Nonlinear differential equations, Linear differential equations, Radar signals, Radio signals, Amplifiers.

A new method of SHF amplification by ferrites is examined, connected with nonlinear gyromagnetic nutation effects. (Author)

Gagin, E. N., Grebenshchikov, S. E., and Pisarev, V. E.
CERTAIN QUESTIONS OF AN ELECTRONIC ELECTROSTATIC VAN DE GRAAF GENERATOR. [1959] 8p. 7 refs. MDF G-173.
Order from OTS $0.50 62-11447

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1959, no. 6, p. 95-101.

DESCRIPTORS: *Electrostatic generators, Design, Generators.

The research to create an electronic electrostatic generator in the P. N. Lebedev Physics Institute AN USSR was completed mostly by the end of 1959. Further efforts were directed toward perfecting the operation of its individual components. The purpose of the present note is to indicate certain specific difficulties which arose in the creation and exploitation of electronic Van de Graaf generator. Special attention has hence been devoted to the question of high stability of the energy of the accelerated electron beam. (Author)

Garmash, V. A., Pereverzev-Orlov, V. S., and Tsirlin, V. M.
SWEEP SCANNER. [1961] 6p. 6 refs. MDF G-202.
Order from OTS $0.50 62-11367

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: E[nergetika] i A[vtomatika] 1961, no. 1, p. 166-170.

DESCRIPTORS: *Electronic scanners, *Identification systems, *Electronic equipment, Design, Operation, Tests, *Reading machines.

A sweep scanner is described that was developed for a reading machine operating on the quasi-topological method of discriminating the letters of the Russian alphabet by classes. During reversal of the external contours of the letters presented, the indices of the points at the locations of the breaks are determined. The sequence of values of the indices of these points obtained for a single traversal of the letters generates code combinations which also underlie the discrimination. Hence, the discrimination of letters within classes obtained by the quasi-topological method is accomplished by using additional logic which processes the signal by the same sweep scanner. During operation of the scanner it was seen that the simplest plane geometric figures can be recognized by annexing a circuit which measures the magnitude of the angles and the length of the sides to the sweep scanner.

Gasar'yants, E. M.
APPRAISAL OF METHODS OF COMPUTING THE MAXIMUM USABLE FREQUENCY [1960] 10p. 16 refs. MDF G-182.
Order from OTS $10.50 62-11541

Trans. of #Elektrosvyaz' (USSR) 1959, v. 13, no. 11, p. 17-23.
Another translation is available from OTS $0.50 as 60-31071, JPRS-3035, 10 Mar 60, 15p.

DESCRIPTORS: *Radiofrequency, Mathematical analysis.

The accuracy of computing the maximum usable frequency (MUF) by means of the methods most widely used in practice is examined by comparing computed and experimental values. The experimental data were obtained on middle-latitude radio relay lines of 1500 to7000 km in extent and they are simultaneous measurements of the field intensity and angle of arrival in the vertical plane. The average values of the deviations of the computed MUF from the experimental values permit an assessment of the magnitudes of the corrections which should be introduced upon using the considered methods of computing the MUF. (Author)

Gekker, I. R.
ON THE QUESTION OF RAISING THE EFFICIENCY OF MICROWAVE DEVICES BY RETARDING ELECTRONS IN A COLLECTOR. [1960] 9p. 8 refs. MDF G-190.
Order from OTS $0.50 62-11535

Trans. of Izvestiya V[ysshikh U[chebnykh] Z[avedenii]. Radiotekh[nika] (USSR) 1960, v. 3, no. 4, p. 441-447.

DESCRIPTORS: *Klystrons, *Microwave equipment, Electrons, Energy, High frequency.

The electron energy distribution at the output of the interaction space of a microwave device is analyzed. The possibility is shown of using a method of multistage retardation of the electrons in a sectioned collector in order to raise the efficiency. Integral electron energy distributions beyond the output cavity of transit klystrons which have been obtained theoretically are presented for both the case of an elementary kinematic approximation and with account taken of the large amplitudes in the penultimate cavity, of the space charge and of the finite gap width in the output cavity. A comparison is presented between experimental results in a glass double-cavity klystron and theoretical data. The possibilities are discussed of raising the efficiency of various microwave devices by retarding the electrons in a collector. (Author)

Grimbergen, H. A. A.
FROM ALTIMETER TO AM-FM-TV SWEEPGENERATOR (Van Surplus-hoogtemeter tot AM-FM-TV Sweepgenerator) tr. by Mrs. A. P. Lagerwerff. [1959] 7p. (3 charts 1 illus. omitted). H-4109 A.
Order from OTS or SLA $1.10 59-21170

Trans. of Electron (Netherlands) 1955 [v. 10] p. 224-226.

DESCRIPTORS: *Altimeters, Amplitude modulation, Frequency modulation, Television, *Sweep generators.

Grebenshchikov, V. N.
ALGEBRAIC METHOD OF ANALYZING MULTITERMINAL CONTACT-RECTIFIER NETWORKS. Feb 60 [13]p. 3 refs. MDF G-170; AFCRC-TN-60-159, AD-234 715.
Order from OTS $0.50 62-11448

Trans. of Moscow U. Vestnik. Ser[iya] M[atematiki] M[ekhaniki] A[stronomii] F[iziki] Kh[imii] (USSR) 1959, v. 14, no. 2, p. 69-78.

DESCRIPTORS: *Electrical networks, Mathematical analysis, Matrix algebra, Circuits.

An algebraic method is proposed for analyzing multiterminal contact circuits with blocking elements. In the proposed method recursion formulas of Boolean algebra are used, which describe the relations between the sub-circuits of the prescribed circuit which differ by a terminal. contact or rectifier. (See also 59-18649)

Grebenshchnikov, B. N.
METHOD TO SYNTHESIZE MULTITERMINAL CONTACT CIRCUITS. [1958] 6p. 3 refs. MDF G-145.
Order from OTS $0.50 62-11445

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1958, v. 119, no. 2, p. 278-281.

DESCRIPTORS: *Wiring diagrams, Synthesis.

A method is proposed for synthesizing multiterminal contact circuits of general form. The first attempt to synthesize circuits of this type was by Lunts, (Izvest. Akad. Nauk U. S. S. R. Ser. Mat. 16:405, 1952; Doklady Akad. Nauk U. S. S. R. 112, no. 1: 1957). The problem comprised synthesizing a n-terminal contact circuit in which the total conductivity existed between each pair of terminals. The method of synthesis involved the successive isolation of the external multiterminal contacts. Methods of isolating the external contact were (1) a longitudinal contact, (2) a transverse contact, and (3) a longitudinal-lateral contact. A theorem is proved that any external contact of an arbitrary multiterminal circuit can be isolated by using one of these methods. In a method of synthesizing multiterminal, noniterated circuits, where a contact of each kind was to be encountered only once, isolated variables could not be encountered in the functions and thus led to a simplification. The contact conductivities of the multiterminal network obtained, when r longitudinal and transverse contacts are isolated from the multiterminal network, were shown to be independent of the order in which the r contacts were isolated. Examples of synthesizing networks of this type are given.

Kerbnikov, F. I. and Rozenblat, M. A.
MAGNETIC MODULATORS WITH TRANSVERSE EXCITATION (Magnitnye Modulyatory s Poperechnym Vozbuzhdeniem) tr. by V. Burdon. 23 June 61 [12]p. (foreign text included). Trafford Park trans. no. 3023; NLL M. 3471.
Order from OTS or SLA $1.60 62-23944

Partial trans. (p. 837-841) of #Avtomat[ika] i Telemekh[anika] (USSR) 1958, v. 19, no. 9 [p. 836-848].

DESCRIPTORS: *Magnetic modulators, *Excitation, Ferrite cores, Magnetic materials.

The description is given of a modulator with frequency doubling.

Korobkov, L. A.
A METHOD FOR COUPLING A MULTICHANNEL COMMUNICATIONS SYSTEM WITH TIME-DIVISION MULTIPLEX TO A SYSTEM WITH CHANNEL FREQUENCY-DIVISION MULTIPLEX, AND A DEVICE FOR THIS PURPOSE. 20 Oct 61 [5]p. FTD-TT-61-185; AD-266 701.
Order from OTS $1.10 62-13564

Trans. of Russian patent 128907, 1959, 4p.
Another trans. is available from OTS or SLA $1.10 as 61-23836, MCL-892, 2 May 61 [2]p.

DESCRIPTORS: *Communication systems, *Multiplex transmission, *Radio communication systems, Coupling circuits, Frequency modulation, Detection, Linear systems, Signals, Low frequency, Memory devices

The method for coupling a multichannel communications system with time-division multiplex to a system with channel frequency-division multiplex is distinguished by the fact that, in order to eliminate the conversion of the group signal to low frequency and to reduce the amount of equipment, the fragments of the group signal of the system with time-division multiplex using a frequency-time selection device and frequency conversions are transformed into signals which are divided in time and frequency. Afterwards they are stored successively, N times by the memory device, and reproduced simultaneously and continuously. The device used for this

purpose is distinguished by the fact that, in order to convert the group signal of the system with time-division multiplex into a signal of a system with frequency-division multiplex, it must contain a frequency-time selector which divides the channel frequencies signals in time and according to frequency; a storage device is connected at its output to store these signals successively (N times), and then reproduce them simultaneously and continuouslv. (Author)

Krasovskii, A. A.
DYNAMICS OF CONTINUOUS SYSTEMS OF EXTREMAL CONTROL USING RANDOM SEARCH SIGNALS. July 62 [4]p. 6 refs.
Order from ARS in Its Journal, v. 32, no. 7, $3.00

Trans. of Akademiya Nauk SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvestiya: Energetika i Avtomatika, 1960, no. 3, p. 37-45.
Another trans. is available from OTS or SLA $1.60 as 62-23432, JPRS-12960, 15 Mar 62 [17]p.

DESCRIPTORS: *Control systems, Dynamics, Oscillation, Low frequency, Noise (Radar), Search radar, Radar signals.

Kroll, Josef.
ELECTRIC MACHINE, ESPECIALLY HIGH SPEED GENERATOR WITH SEPARATE, GASTIGHT CHAMBERS FOR THE STATOR AND THE ROTOR, tr. by L. A. N. 16 May 62, 8p. (1 fig. omitted) 7 refs.
Order from OTS or SLA $1.10 62-25023

Trans. of German patent 896,086, cl. 21d[1], gr. 46, by Brown, Boveri et Cie, Aktiengesellschaft, pat. from 4 Apr 52, appl. announced 27 Nov 52, grant announced 1 Oct 53, pub. 9 Nov 53.

DESCRIPTORS: *Electric machinery, Design, *Generators, Cooling.

The machine is characterized in that, when in operation, the rotor chamber is under low pressure while the stator chamber is under higher pressure. The rotor is internally cooled with liquid or gaseous substances. The coolant for the internal cooling of the rotor is supplied and discharged through concentrical pipe connections arranged at one of the shaft ends. The gas pressure in the stator chamber is held high enough so that a favorable insulating strength is obtained with reference to the high-voltage winding, in addition to a favorable convection ratio of the cooling gases.

Kudin, Sergei Nikolaevich; Podgorinov, Anatolii Leonidovich; and Khilobochenko, Leonid Samsonovich
SMALL HYDROELECTRIC POWER PLANTS OF THE UKRAINIAN SSR. 23 Feb 62 [235]p. JPRS: 12619.
Order from OTS or SLA $15.00 62-19769

Trans. of Mono. Mali Gidroelektrostantsiyi Ukrayins'koi RSR, Kiev, 1960, 160p.

DESCRIPTORS: *Hydroelectric power systems, *Power plants, Generators, Turbines, *Dams, Inland waterways

This book presents a general review of the newly built hydroelectric power plants, shows the power resources of the small and medium-sized rivers in the Ukraine, discusses the organization of local power systems, the types of hydroengineering installations typical of the Ukraine as well as the hydroelectric power plants with new technical features, including those under construction. The operating hydroelectronic power plants are located at the river waterfalls which make it possible to use the most practical construction compatible with local natural conditions. The most interesting hydropower installations are described in detail, while others are briefly characterized. This book is based on the materials of the Ukrainian Diprosil'elektro Institute and the Ukrsil'elektrobud Trust. (Author)

Lesota, S. K.
MEASURING THE CROSS-CORRELATION OF AMPLITUDE AND FREQUENCY FLUCTUATIONS OF A REAL GENERATOR BY THE BERSHTEIN METHOD [AND] MEASUREMENT OF THE CORRELATION BETWEEN AMPLITUDE AND FREQUENCY FLUCTUATIONS IN A REFLEX KLYSTRON. [1962] [14]p. 13 refs. [DSIR] NLL M. 4828.
Order from OTS or SLA $1.60 62-24872

Trans. of Moscow U. Vestnik. Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii (USSR) 1959 [v. 14] no. 1, p. 109-116 [and] Moscow U. Vestnik. Seriya 3: Fizika, Astronomiya (USSR) 1961 [v. 16] no. 2, p. 3-8.
Another trans. of each respectively is available from OTS $0.50 as 62-11498, MDF L-131 [1959] 8p. and from OTS or SLA $1.60 as 61-28536, MCL-1271, 17 Aug 61 [11]p.
DESCRIPTORS: *Frequency multipliers, *Amplitude modulation, *Phase modulation, Modulation, *Frequency modulation, *Correlation techniques, Statistical functions, Delay lines, *Reflex klystrons, Measurement.

For abstracts see Technical Translations 7: 26 and 522-523, 1962.

Merey, Imre.
THE 800 KV CASCADE GENERATOR OF THE DEPARTMENT OF ATOMIC PHYSICS OF THE CENTRAL PHYSICAL RESEARCH INSTITUT (A KFKI Atomfizikai Osztalyanak 800 KV-os Kaszkadgeneratora) tr. by Francis S. Juhasz. Apr 60 [14]p. (foreign text included) 11 refs.
Order from OTS or SLA $1.60 UCRL Trans-468

Trans. of Magyar Fizikai Folyoirat (Hungary) 1955, v. 3, p. 489-496.

DESCRIPTORS: Power supplies, *Electrostatic generators, Direct current, *Particle accelerators.

Moser, J. O.
A TELEPHONE PAY STATION FOR LOCAL TRAFFIC. [1962] 7p.
Order from SLA $1.10 62-16604

Trans. of PTT Technische Mitteilungen (Switzerland) 1961, v. 39 [no. 9] p. 316-319.

DESCRIPTORS: *Telephone communication systems, Switzerland, Telephones.

Nabyullin, F. Kh., Gantman, S. A. and others.
CYLINDRICAL ALKALINE CELL. 14 Feb 62 [4]p.
FTD-TT-61-171; AD-272 542.
Order from OTS or SLA $1.10 62-23370

Unedited rough draft trans. of Russian patent 129690, 25 Sep 60.

DESCRIPTORS: *Alkaline cells, *Dry cells, *Electrolytic cells, Electrodes, Electrolytes, Design, Manganese dioxide electrodes, Anodes (Electrolytic cell), Manganese compounds, Dioxides, Graphite, Alkali metal compounds, Cathodes (Electrolytic cell), Zinc

A cylindrical alkaline cell with an anode made of a mixture of manganese dioxide, graphite materials, and alkalis, and a cathode of pasted zinc and a concentrated electrolyte located inside the cavity of the anode differs in that to increase the specific characteristics and to lower the cost of the cell, the anode is pressed into a graphite jar and the cathode has the form of a full cylinder provide inside with a metallic sheathe and coated on the surface with a solid protective layer of starch paste, which simultaneously serves as the cell's diaphragm. (Author)

Nechaev, G. K.
THE CORRECTION OF THERMISTOR TEMPERATURE CHARACTERISTICS (Korrektsiya Temperaturnykh Kharakteristik Termosoprotivlenii).
2 June 61 [7]p. Trafford Park trans. no. 2955; [DSIR] NLL M. 3464.
Order from OTS or SLA $1.10 62-24816

Trans. of Elektrichestvo (USSR) 1960, no. 10, p. 63-64.

DESCRIPTORS: *Thermistors, Resistors, *Temperature, Corrections, Resistance, Conductivity.

An examination is made of the systems with three and two correcting resistors.

Nechay, Andrzej and Stempien, Andrzej.
SOME REMARKS ON THE PRACTICAL APPLICATIONS OF LOGIC SYSTEMS IN NONLINEAR FUNCTION GENERATORS. 22 Nov 61 [11]p. 1 ref.
JPRS: 11132.
Order from OTS or SLA $1.60 62-19491

Trans. of Archiwum Automatyki i Telemechaniki (Poland) 1961, v. 6, no. 1, p. 71-77.

DESCRIPTORS: Semiconductors, Diodes, *Generators, Functions, *Mathematical logic, *Nonlinear systems, Voltage.

The method of S. A. Ginzburg for two-variable function generation is very convenient in practice because of the very simple way of setting the surface. Nonlinear functions can be modelled with a great accuracy using the systems described in the text. Given a suitable choice of components, a function generator, modelling the surface with an accuracy of the order of 1%, can be constructed. Conventional diode generators should be used for generating voltages and (Author)

Tsemel', G. I.
AUTOMATIC DISCRIMINATION OF A LIMITED SET OF WORDS. [1960] 9p. 14 refs. MDF T-151.
Order from OTS or SLA $1.10 62-13699

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Energ[etika] i Avto[matika] 1960, no. 5, p. 179-182.

DESCRIPTORS: *Speech, *Sound, Transmission, *Pattern recognition, Auditory perception, Automatic, Electronic relays, Relays, Speech transmission

The investigation showed the possibility of realizing apparatus to discriminate a small number of words with high reliability (when only words of the set are pronounced). The question of the expediency of using such an apparatus can be solved only by practical utilization. A test of the operation showed the importance of constructing systems to recognize a limited set of words, i.e., systems which react only to a given word and are not sensitive to other words and sounds. (Author)

Office of Technical Services, Dept. of Commerce, Washington, D. C.
THERMOELECTRICITY. Jan 62, 7p. 116 refs. OTS Selective Bibliography SB-432, Suppl. 1.
Order from OTS $0.10

DESCRIPTORS: *Thermoelectricity, Electricity, Materials, Semiconductors, Cooling, Temperature control, Instrumentation, Thermoelectric generators, Generators, *Bibliography

Lists 116 reports and translations added to the OTS collection during the period September 1960 to January 1962. Covers research on properties of thermoelectric materials, measurements for thermoelectric materials, peltier cooling of semiconductor components, temperature control devices, thermoelectric energy converters and generators among other subjects. (Author)

Office of Technical Services, Dept. of Commerce, Washington, D. C.
TRANSDUCERS. July 62, 11p. 166 refs. OTS Selective Bibliography SB-428, suppl. 1.
Order from OTS $0.10 OTS SB-428, Suppl. 1

DESCRIPTORS: *Transducers, *Bibliography, Electroacoustic transducers, Magnetostriction transducers, Photoelectric transducers, Piezoelectric transducers, Underwater sound, Telemeter systems, Electronic equipment

Lists 166 foreign and domestic reports added to the OTS collection during the period Aug 60-July 62. Covers research on transducer materials, temperature regulators, pressure and density sensors, calibration methods, and various types of transducers such as; underwater sound, high power, telemetry, solid state, piezoelectric, microminiature, electroacoustic, magnetostrictive, photoelectric transducers among other subjects. (Author)

Saibel', A. G.
FUNDAMENTALS OF RADIO RANGING, tr. by H. H. 28 June 62, 87p. 19 refs. I-0970.
Order from OTS $2.25 62-11736

Trans. mono. Osnovy Radiodal'nometrii, Moscow, 1960.

DESCRIPTORS: *Range finding, Automatic, Instruction manuals, Radio ranges, *Radar, *Radio navigation, Phase measurement, Radar reflections, Radar signals, *Pulse communication systems, Frequency modulation, Doppler systems, Radar tracking systems

The present training manual is intended for use by students of higher institutions of learning studying the principles of radar, radio navigation and radio engineering. There are five chapters. The first sets forth the fundamentals of radio ranging and discusses its limiting accuracy. The second chapter is devoted to a discussion of phase methods of radio ranging. It also discusses fundamental relationships and the accuracy of phase range finders with combined and independent timers. Special attention is given in this chapter to the problem of selecting the reflected signal carrying the range information. The third chapter sets forth the frequency methods of radio ranging. Consideration is given to the fundamental relationships in harmonic modulation and the accuracy of frequency type ranging instruments is defined. In addition, this chapter discusses the influence of parasitic amplitude modulation and the Doppler effect on the operation of frequency type ranging instruments. The fourth chapter is devoted to a discussion of pulse methods of radio ranging. Cited are fundamental relationships and the accuracy of high duty factor pulse type ranging instruments is determined. (Author)

Savel'ev, V. P., Shmatovich, V. V. and others.
A COMBINED MAGNETIC VALVE ARRESTOR FOR 500 kV. [1961] [11]p. 6 refs. [DSIR NLL] M. 4672.
Order from OTS or SLA $1.60 62-19129

Trans. of Elektrichestvo (USSR) 1961, no. 4, p. 13-20.

DESCRIPTORS: *Lightning arrestors, *Switching circuits, *Voltage, Transmission lines, Electrical equipment, Valves, Magnetic properties.

Tsypkin, Ya. Z.
THE EFFECT OF RANDOM INTERFERENCE ON THE PERIODIC OPERATION OF RELAY AUTOMATIC SYSTEMS. [1962] [4]p. 4 refs. [DSIR] NLL M. 4992.
Order from OTS or SLA $1.10 62-25911

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 139, no. 3, p. 570-573.
Another trans. is available from OTS or SLA $1.10 as 61-28893, JPRS-10437, 10 Oct 61 [8]p.

DESCRIPTORS: Automatic, *Remote control systems, Control systems, Relays, Noise, Statistical distributions, Operation.

For abstract see Technical Translations 7: 144, 1962.

Mechanical Engineering

Doroshchuk, V. E. and Frid, F. P.
THE EFFECT OF THROTTLING THE FLOW AND OF THE HEATED LENGTH OF PIPE ON CRITICAL HEAT LOADS [K Voprosu o Vliyanii Drosselirovaniya Potoka i Obogrevaemoi Dlinnyi Trubki na Kriticheskie Teplovye Nagruzki]. 25 Sep 61, 9p. 7 refs.
Order from OTS or SLA $1.10 AEC-tr-4812

Trans. of Teploenergetika (USSR) 1959, v. 6, no. 9, p. 74-79.
Other translations are available from ATS $15.40 as ATS-92M4OR [1960] 9p.; from LC or SLA mi$2.40, ph$3.30 as 61-13224, RTS-1464, Sep 60 [14]p.; from OTS or SLA $1.10 as 61-28187, CE Trans-1873 [1961] [10]p.

DESCRIPTORS: *Steam pipes, Tests, *Boiler tubes, Design, *Heat transfer, Boilers, Steam, Water, Thermodynamics, Pipes.

Migai, V. K.
INCREASING THE EFFICIENCY OF DIFFUSERS BY FITTING TRANSVERSE FINS (Povyshenie Effektivnosti Diffuzorov Putem Ustanovki Poperechnogo Orebreniya) tr. by D. R. H. Phillips. 29 Sep 61 [8]p. 3 refs. Trafford Park trans. no. 3026; NLL M. 3594.
Order from OTS or SLA $1.10 62-24659

Trans. of Teploenergetika (USSR) 1961 [v. 8] no. 4, p. 41-43.

DESCRIPTORS: *Diffusers, *Fins, Operation, Tests.

A method is examined of increasing the efficiency of diffusers by means of transverse fins cut in the walls of the normal smooth diffuser.

Vilaça, Maria Jose.
REFRIGERATION CAPACITY OF THE STATE OF SÃO PAULO (A Capacidade de Refrigeração no Estado de São Paulo) tr. by Medardo Gutierrez. [1958] [27]p. H-1672.
Order from OTS or SLA $2.60 59-11916

Trans. of [Departamento de Estadistica. Boletim] (Brazil) 1953 [no. 1] p. 25-36.

DESCRIPTORS: *Refrigeration systems, *Food, Storage, Warehouses, *Refrigerator cars, Transportation, Economics, Brazil.

Ordnance, Missiles, and Satellite Vehicles

Berezin, V.
COSMIC TRIPS. 5 Feb 62 [10]p. (8 figs. omitted). FTD-TT-62-41; AD-271 817.
Order from OTS or SLA $1.10 62-19637

Unedited rough draft trans. of Yunyi Tekhnik (USSR) 1961 [v. 6] no. 5, p. 8-13.

DESCRIPTORS: *Space flight, Space probes, Venus, *Satellite vehicles, Manned, Orbital flight paths.

Bodner, V. A. and Seleznev, V. P.
ON A THEORY OF INTERTIAL PENDULUM SYSTEMS. 29 Dec 61, 2p. AID rept. 61-172: AD-271 542.
Order from OTS or SLA $1.10 62-19119

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1961, no. 5, p. 163-173.

DESCRIPTORS: Substitutes, Gyroscopes, *Inertial guidance, *Inertial navigation, *Guidance, *Control systems.

Isaev, V. K.
PONTRYAGIN'S MAXIMALITY PRINCIPLE AND OPTIMAL ROCKET THRUST PROGRAMMING. Paper presented at the Scientific Conference (no. 6) Moscow, 15 Apr 60 and the All-Moscow Seminar on Nonlinear Problems on the Theory of Automatic Regulation, Moscow, June 60. 14 Feb 62 [24]p. 13 refs. JPRS: 12528.
Order from OTS or SLA $2.60 62-19162

Trans. of #Avtomatika i Telemekhanika (USSR) 1961, v. 22, no. 8, p. 986-1001.
Another trans. is available from OTS $0.75 as 62-11117, APL/JHU TG-230-T254, 17 Nov 61, 23p.

DESCRIPTORS: *Rocket flight, Mathematical analysis, *Thrust, Programming, Non-linear differential equations, Control.

For abstract see Technical Translations 8:53, 1962.

Kotobeinikov, V. P., Mel'nikova, N. S., and Ryazanov, E. V.
THE THEORY OF POINT EXPLOSION. 2 July 62 [579]p. 77 refs. JPRS: 14334.
Order from OTS or SLA $26.00 62-25712

Trans. of mono. Teoriya Tochechnogo Vzryva, Moscow, 1961, 330p.

DESCRIPTORS: Theory, *Explosions, Equations, *Adiabatic gas flow, Blast, Pressure, Numerical analysis, *Shock waves, Gas flow, Detonation, Propagation, Explosive gases, Compressible flow.

Contents:
Fundamental equations and formulation of problems
Self-modeling problems of adiabatic flow of perfect gases
Linearized non-self-modeling problems
Nonlinear problem of blasts with counterpressure and results of its numerical solution
Approximate formulas for quantities characterizing the shock wave front during blasts
Exact discontinuous gas dynamics equations and their application to the theory of point explosions
Intense explosions in nonadiabatically flowing perfect gas
Point explosions in some ideal media other than perfect gases.

Sergeev, K.
THE SOVIET LAND HAS BECOME THE SHORE OF THE UNIVERSE. 23 Jan 62 [9]p. FTD-TT-62-96.
Order from OTS or SLA $1.10 62-19645

Unedited rough draft trans. from Pravda [Moscow] (USSR) 1961, 31 Dec.

DESCRIPTORS: *Space flight, *Spaceships, Satellite vehicles, Astronautics.

From the shore of the Universe, which is what the sacred earth of our Motherland has become, more than once Soviet ships will take off for unknown cosmic distances. Each of their flights and returns will be a great holiday for the Soviet people, for all progressive mankind, the victory of the Intellect and Progress! By means of satellites and piloted orbital apparatus we will carry out scientific investigation of the earth as a planet of the solar system, we will study the regions of cosmic space adjoining the earth and the phenomena associated with both the sun's activity and those depending on the processes occurring in the far reaches of the Universe. We will find a practicable solution to the problem of high-speed mail delivery, freight transportation, and passenger excursions on rocket spaceships. (Extracted)

Viktorov, V. V. and Stepenov, R. D.
MODELING OF THE ACTION OF AN EXPLOSION WITH CONCENTRATED CHARGES IN UNIFORM (HOMOGENEOUS) GROUND (Modelirovanie Deistviya Vzryva Sosredotochennykh Zaryadov v Odnorodnykh Gruntakh) tr. by Marcel I. Weinreich. 8 Dec 61, 15p. 4 refs.
Order from OTS or SLA $1.60 SCL-T-392

Trans. of Akademiya Nauk SSSR. Institut Mekhaniki. Inzhenernyi Sbornik, 1960, v. 28, p. 87-96.

DESCRIPTORS: Explosions, *Underground explosions, Model tests, Detonation, Acceleration, Simulation, *Linear accelerators, Accelerators, Gravity, Craters.

The experiments carried out with the modeling of explosion phenomena in the ground, and a comparison of the experimental results with nature data, demonstrated the adequacy of applying the linear mechanical accelerator for the purpose of modeling the effect of a blast on the throwout of soil and rocks. In contrast to the modeling on a linear accelerator, the modeling performed on a centrifugal machine is not applicable at all for a number of problems because of the distortion of the results of the modeling by the Coriolis acceleration which, in turn, is conditioned by the rotation of the centrifuge and by the relative movement (motion) of the masses of ground being thrown out by the blast. (Author)

Sanitation and Safety Engineering

Egiazarov, I. V.
POSSIBILITY OF SIGNIFICANT ECONOMY OF WATER RESOURCES FOR NATIONAL ECONOMY AND A MONOMOLECULAR FILM FOR COMBATTING EVAPORATION FROM THE SURFACES OF RESERVOIRS AND LAKES, REPT. 3 (Vozmozhnost' Znachitel'noi Ekonomii Vodnykh Resursov dlya Narodnogo Khozyaistva i Odnomolekulyarnaya Plenka dlya Bor'by s Ispareniem s Poverkhnosti Vodoemov, Ozer i Vodokhranilishch, Soobshchenie 3) tr. by June Stevens. Dec 61 [17]p. (foreign text included) 2 refs. Bureau of Reclamation. Trans. 394.
Order from OTS or SLA $1.60 62-25133

Trans. of Akademiya Nauk Armyanskoi SSSR, Erevan. Izvestiya. Seriya Tekhnicheskikh Nauk, 1961, v. 14, no. 2, p. 7-11.

DESCRIPTORS: Water, *Water supplies, *Evaporation, Countermeasures, Monomolecular films, Films, Effectiveness, Hydraulic reservoirs, Lakes, Economics.

Data computed by the Bureau of Reclamation, U.S.A., in 1960, are presented. These data pertain to chemicals used for combatting evaporation from surfaces of reservoirs by the use of a monomolecular film on Lakes Rattlesnake, Ralston, Keeds, Hefner, Mead, and Sahuaro. All the films of fatty alcohols, C_{16} to C_{18}, were influenced by the temperature of the water surface, and the effect of the temperature varied with change of the chemical composition. The presence of octadecanol, C_{18}, reduced the effect of temperature. Additions of reduced evaporation by means of the film and between the chemical composition and the amount of reduction of evaporation is not clearly defined. Spreading an additive of ethylene also reduced evaporation. In large reservoirs, the very best results were obtained by spreading dry powders of fatty alcohol with dimensions of the particles about 100 microns. In addition, the diameter of the agglomerate particles should not exceed 1 millimeter. (Author)

Klosse, Ernst, Scheichl, Ludwig, and Schwalb, Karl.
PROCEDURE FOR FLAME-PROOFING AND QUENCHING OF LIGHT METALS. [1962] 3p. 6 refs.
Order from OTS or SLA $1.10 62-16168

Trans. of German patent 1,049,707, 29 Jan 59.

DESCRIPTORS: Metals, *Magnesium, *Magnesium alloys, Combustion, *Fires, *Fire extinguishers, *Carbon compounds, Oxides, *Ammonia.

The process for the flame-proofing and quenching of light-metals, particularly magnesium or their alloys, is characterized by bringing into contact with substances which the metals in the heat split off carbon monoxide or carbon monoxide and ammonia, or carbon monoxide and ammonia by themselves in the absence of water.

Nemirovskii, N. L. and Meerovich, G. I.
A COLORIMETRIC METHOD FOR THE QUANTITATIVE DETERMINATION OF METHYL METHACRYLATE IN THE AIR OF WORKING PREMISES.
7 Feb 62 [7]p. 2 refs.
Order from OTS or SLA $1.10 62-16056

Trans. of Gigiena i Sanit[ariya] (USSR) 1958, v. 23, no. 2, p. 83-85.

DESCRIPTORS: *Colorimetry, *Quantitative analysis, *Acrylic acid esters, Methyl radicals, *Air *Contamination, Industrial medicine, Bromine, Test facilities, Sanitary engineering.

The proposed method for determination of MMA is characterized by simplicity of execution, requires little time, provides for the use of constant color-standard solutions, prepared once for a long time (up to 1 year and longer). The method can be used for quantitative determination of other compounds with which bromine enters into addition or substitution reactions. The method permits quantitative determination of MMA in amounts of 0.01 mg per ml of alcohol. (Author)

Prechistenskii, S. A.
RADIOACTIVE WASTES IN THE ATMOSPHERE: THE PLANNING OF FACILITIES FOR REMOVING WASTES FROM AEROSOLS AND GASES: SELECTED PARTS. 26 Feb 62 [69]p. JPRS: 12637.
Order from OTS or SLA $6.60 62-19779

Trans. of mono. Radioaktivnye Vybrosy v Atmosferu: Proektirovanie Ustanovok dlya Ochistki Vybrosov ot Aerozolei i Gazov, Moscow, 1961, p. 1-14 and 155-170.

DESCRIPTORS: *Radioactive waste, *Atmosphere, *Aerosols, *Gases, Decontamination

In this book the author has endeavored not only to acquaint the readers with new methods for air cleaning, but also to present basic information which is essential in planning facilities. General theory is given in the amount essential for understanding cleaning processes and the operation of equipment (Author)

Ship Building

SCIENTIFIC-TECHNICAL CONFERENCE DEDICATED TO THE MEMORY OF PROF. M. I. YANOVSKII, CORRESPONDING MEMBER OF THE ACADEMY OF SCIENCES USSR (NO. 3) (Tret'ya Nauchno-Tekhnicheskaya Konferentsiya Posvyashchennaya Pamyati Chlena-Korrespondenta AN SSR Professora M. I. Yanovskogo). 14 Nov 60 [5]p. JPRS: 4180.
Order from OTS or SLA $1.10 62-23488

Trans. of Sudostroenie (USSR) 1960 [v. 26] no. 8, p. 75-76.

DESCRIPTORS: Conferences, *Ships, Construction, *Ship turbines.

VIEWS ON SOVIET SHIPBUILDING. 19 Feb 62 [13]p. 1 ref. JPRS: 12600.
Order from OTS or SLA $1.60 62-19171

Trans. of Sudostroenie (USSR) 1961 [v. 27] no. 10, p. 3-4 and 76-78.

DESCRIPTORS: *Ships, Construction, *Industry.

Contents:
Creative activity of the scientists of the Leningrad Shipbuilding Institute, by A. A. Moiseev
Work of the Scientific-Technical Society of the Shipbuilding Industry.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Barcelo, J. and Bellanato, J.
INFRARED SPECTRUM OF SOME VEGETABLE OILS. [1962] 10p.
Order from K-H $12.50 K-H 3710-c

Trans. of Sociedad Española de Fisica y Química. Anales (Spain) 1953, v. 49B, no. 9/10, p. 557-564.

DESCRIPTORS: *Vegetable oils, Infrared spectroscopy.

Joppien, P. H.
IDENTIFICATION AND DETERMINATION OF VANILLIN IN FOODS. [1962] 16p.
Order from K-H $20.00 K-H 11499 d

Trans. of Z[eitschrift für] Lebensmittel-Untersuch[ung] u[nd] Forsch[ung] (West Germany) 1961, v. 115, no. 1, p. 20-26.

DESCRIPTORS: Determination, Indentification, *Food

Rehm, Hans-Jürgen.
LIMITING INHIBITORY CONCENTRATIONS OF THE PERMITTED PRESERVATIVES AGAINST MICROORGANISMS. [1962] 17p. 144 refs.
Order from SLA $1.60 62-10903

Trans. of Z[eitschrift für] Lebensm[ittel]-Untersuch[ung] u[nd]-Forsch[ung] (West Germany) 1961, v. 115, no. 4, p. 293-309.

DESCRIPTORS: *Food, Storage, Inhibition, *Microorganisms, *Additives, *Preservation, Standards.

From a large number of the values, which were taken from the literature or determined experimentally, were compiled in tabular form the antimicrobial spectra of the preservatives permitted in Germany: sorbic acid, formic acid, benzoic acid, ethyl and propyl ester of p-hydroxy benzoic acid. The results obtained in the laboratory experiment of the antimicrobial actions of the preservatives named were discussed in comparison with the preservative concentrations permitted in appendices 2 and 4 of the KVO. For the inhibition of many known food spoiling microorganisms the permitted concentrations of the preservative suffice (in the laboratory experiment, a transfer of the results to food is due now). Lactobacilli have shown themselves as yet to be relatively resistant, and it is questionable whether it is possible to attain a certain killing of these bacteria with the presently permitted preservatives. (Author)

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

AUTOMATIC GOVERNOR FOR GEARSHIFT-MECHANISMS, FOR MOTORS. June 60, 1694 words.
Order from K-H K-H 10041 b

Trans. of Danish patent 66573 [pub. 1948].

DESCRIPTORS: *Control systems, *Transmission gears, Automatic, *Gears.

EXPERIMENTAL SCIENTIFIC RESEARCH INSTITUTE OF METAL CUTTING MACHINE TOOLS (ENIMS) AND ORDER OF LENIN STANKOKONSTRUKTSIYA PLANT: SELECTED EXCERPTS. 9 July 62 [42]p. (photos omitted). JPRS: 14409.
Order from OTS or SLA $4.60 62-25717

Trans. of mono. Eksperimental'nyi Nauchno-Issledovatel'skii Institut Metallorezhushchikh Stankov i Ordena Lenina Zavod Stankokonstruktsiya, Moscow, 1958, p. 23-54 and 62-66.

DESCRIPTORS: *Machine tools, Metals, *Cutting tools, Automation, Production, Automotive industry, *Machines, *Machine tool industry, Tools.

Contents:
The postwar activity of ENIMS and the Stankokonstruktsiya plant
Memorable dates from the history of ENIMS and the Stankokonstruktsiya plant.

SOME PROBLEMS IN ORGANIZATION, PLANNING, AND ECONOMICS OF THE AIRCRAFT INDUSTRY. 25 Aug 61 [103]p. MCL-998; AD-266 763.
Order from OTS or SLA $9.10 62-13563

Unedited rough draft trans. of [Aviatsionnyi Institut, Moscow. Trudy] (USSR) 1959, v. 114, 69p.

DESCRIPTORS: *Aircraft industry, *Industrial production, Economics, Scheduling, Theory.

Contents:
Summary
On problem of extended net cost calculation of production by A. V. Glichev
Ways for improving the planning of wage funds at aircraft-constructing enterprises, by S. A. Sarkisyan
Planning of supplementary and finishing operations during the production of experimental subassembly models, by L. M. Mamicheva
On the index of production completeness, by S. I. Didenko
On the calculation of productive capacity of aircraft plants, by D. E. Starik
Organizational setup of control service at a serial aircraft production plant, by V. V. Chesnokov
Setting standards for winding operations by typification of technological processes, by K. D. Zakharov.

Artobolevskii, I. I.
BASIC PROBLEMS IN MODERN MACHINE DYNAMICS. 10 Apr 62 [54]p. 190 refs. JPRS: 13393.
Order from OTS or SLA $5.60 62-23824

Trans. of Akademiya Nauk SSSR. Institut Mashinovedeniya. Trudy, 1961, v. 21, no. 83, p. 5-28.

DESCRIPTORS: *Machines, Dynamics, Design, Operation, Elasticity, Friction, Vibration, Control, Pneumatic devices, Hydraulic systems, Theory, Bibliography.

Korobeinikov, V. G., Sak-Shak, B. A., and [Tetelyutin, Yu. L.].
ACTIVE INSPECTION ON MODERNIZED MACHINE TOOLS [AND] SPECIAL FEATURES OF THE FABRICATION AND OPERATION OF AUTOMATED MACHINE TOOLS. 19 June 62 [51]p. (20 figs. omitted) FTD-TT-62-133.
Order from OTS or SLA $5.60 62-25820

Unedited rough draft trans. of mono. Avtomatizatsiya Universal'nykh Metallorezhushchikh Stankov, Moscow, 1960, p. 119-139 and 146-158.

DESCRIPTORS: *Machine tools, *Automation, Lathes, Machining, Precision finishing, Grinding wheels, Milling machines, Metals, Cutting tools, Manufacturing methods, Management engineering.

Information is reviewed on (1) automatic fine adjust- (Machinery, Fabrications and Accessory Equipment, ment of lathes, (2) the model ZG12 automated cylindrical grinding machine, (3) special features of the operation of automated machine tools, and (4) the organization of the planning and production of equipment.

Sh., Ya.
CONVERSION PROBLEMS CONFERENCE OF THE STATE COMMITTEE OF THE COUNCIL OF MINISTERS USSR FOR AUTOMATION AND MACHINE-BUILDING. 16 Mar 62 [10]p. JPRS:13103.
Order from OTS or SLA $1.10 62-23608

Trans. of #Tsvetnye Metally (USSR) 1961, v. 34, no. 6, p. 81-84.

DESCRIPTORS: *Machines, Construction, *Automation, Conferences.

Engines and Propulsion Systems

Bartosh, E. T.
CALCULATION OF LEAKAGE THROUGH GAS TURBINE LABYRINTH GLANDS. [1962] [12]p. 7 refs. [DSIR] NLL M. 3323.
Order from OTS or SLA $1.60 62-24886

Trans. of Energomashinostroenie (USSR) 1960, v. 6, no. 12, p. 22-25.

DESCRIPTORS: *Gas turbines, *Gas seals, Gas flow, Reduction.

The method of calculation of leakage through labyrinth glands described gives quite accurate results for any number of constrictions. (Author)

Gukasova, E. A.
TURBINE STAGE WITH LONG BLADES (Turbinnaya Stupen' s Dlinnymi Lopatkami). [1962] [42]p. Trafford Park trans. no. 2988; [DSIR] NLL M. 3592.
Order from OTS or SLA $4.60 62-24911

Trans. of mono. [Aerodinamicheskoe Sovershenstvovanie Lopatochnykh Apparatov Parovykh i Gazovykh Turbin] (Aerodynamic Development of the Blade Apparatus of Steam and Gas Turbines) Moscow, 1960, chap. 12.

DESCRIPTORS: Steam turbine blades, Gas turbine blades *Turbine blades, Design, Operation, Aerodynamics, *Turbines.

Topics discussed include: (1) Methods of designing the blades of a turbine stage with low ratios of mean diameter to blade length; (2) Experimental investigation of blading of turbine stages with low ratios of mean diameter to blade length; and (3) On the effect of the degree of reaction and the main structural elements on the characteristics of a turbine stage with long blades.

Paushkin, Ya. M.
CHEMISTRY AND SPACE FLIGHTS. [1962] 5p. [DSIR] NLL M. 4825.
Order from OTS or SLA $1.10 62-24869

Trans. of Priroda (USSR) 1961 [v. 50] no. 8, p. 16-20. Another trans. is available from OTS or SLA $1.10 as 62-13708, JPRS-11537, 8 Dec 61 [9]p.

DESCRIPTORS: *Space flight, Rocket propellants, Rocket fuels, Liquid rocket propellants, Solid rocket propellants, Oxygen, Liquified gases, *Rocket propulsion

Shubenko-Shubin, B. A.
PRINCIPAL FEATURES OF THE 300-240 TURBINE UNIT (Osnovnye Osobennosti Turbinnogo Agregata K-300-240 KhTGZ). 12 May 61 [18]p. Trafford Park trans. no. 2939; [DSIR] NLL M. 3355.
Order from OTS or SLA $1.60 62-24888

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 10, p. 6-13.

DESCRIPTORS: *Steam turbines, Turbines, Design, Operation, Economics.

The design and technological features are described of the three-cylinder, single-shaft K-300-240 turbine unit of the Khar'kov Turbine Works.

Transport, Traction and Hoist Facilities

PHOTOGRAPHS OF GANTRY CRANES FOR VOSTOK-1 AND VOSTOK 2. 26 Mar 62, 5p. AID rept. 62-36.
Order from OTS or SLA $1.10 62-24488

DESCRIPTORS: *Hoists, Structures, Photographic analysis, Satellite vehicles, Spaceships, Launching.

A close scrutiny of the photos suggests the possibility that they are photos of a movie prop used in the Soviet film "To the Stars" rather than those of authentic gantries. (Author)

SOVIET INDUSTRIAL DEVELOPMENT: SELECTED TRANSLATIONS ON SOVIET AUTOMOTIVE INDUSTRY (17). 13 July 62 [30]p. JPRS: 14465.
Order from OTS or SLA $2.60 62-32002

Trans. of Za Rulem (USSR) 1961 [v. 19] no. 10, p. 12-14; 1962 [v. 20] no. 1, p. 11-13; no. 2, ##p. 15-17.
##Another trans. is available from OTS $0.50 as 62-11690, 30 Apr 62, 5p.

DESCRIPTORS: *Automotive industry, *Cargo vehicles *Passenger vehicles, Design, Production, Transportation.

Contents:
The lightweight, all purpose "Tselina" farm truck, by B. Fitterman
The modernized KrAZ heavy-duty trucks, by N. M. Chistov
The modernized LAZ buses, by K. M. Atoyan
##The KrAZ-250 truck, by N. Chistov.

Huber, Jakob.
ARRANGEMENT ON TRACK INSTALLATIONS FOR RAIL VEHICLES, tr. by J. B. 14 June 62, 12p. (2 figs. omitted) 7 refs.
Order from OTS or SLA $1.60 62-25691

Trans. of German Auslegeschrift 1,051,895, cl. 20k/3. internat. cl. B 61m, appl. 11 Jan 54, announced and Auslegeschrift pub. 5 Mar 59 (priority claimed: Switzerland, 13 Feb 53).

DESCRIPTORS: *Railroad tracks, *Railroad cars, Railroads, Vehicles, Transportation.

The invention relates to an arrangement on track installations for rail vehicles, wherein at least in one section of the track of the track installation at least one of the two rails is surrounded by U-shaped magnet yokes that are open above and render possible the generation of a magnetic field passing transversely with respect to the direction of movement of a wheel, in the area of the rim of a wheel of a rail vehicle rolling on such rail. In this connection, the purpose of the invention is not only the possibility of imparting braking forces electrodynamically to a rail vehicle which, in itself, is motorless, but also the possibility of imparting accelerating motive forces. This is attained in accordance with the invention in such manner that each of both arms of the magnet yokes possesses at its upper end a running surface for the portions of the rim of the wheels of the rail vehicle projecting over the sides of the rail, that the magnet yokes are mounted as a unit movable in vertical direction with respect to the rail, and furthermore that both rails of the track section form parts of an electrical circuit containing a voltage source, the circuit leading from one pole of the voltage source along a rail to the wheel sets of a rail vehicle present on the track section, then over the wheel sets of such rail vehicle to the other rail and thereupon along the latter back to the other pole of the voltage source. (Author)

Manduk, V.
PNEUMATIC TRANSPORT IN THE CHEMICAL FIBER INDUSTRY (Pnevmaticheskii Transport v Promyshlennosti Khimicheskikh Volokon). [1961] [12]p. (foreign tex included).
Order from OTS or SLA $1.60 62-14259

Trans. of Khim[icheskie] Volokna (USSR) 1960, no. 3, p. 48-50.

DESCRIPTORS: *Pneumatic systems, *Conveyors, *Synthetic fibers, Industrial equipment.

The concrete examples given for the application of pneumatic conveyors in industrial chemical plants show the suitability of these conveyors for transporting various materials. The method of transport described can be recommended for use in the production of viscose and synthetic fibers. (Author)

Plutser-Sarno, Yu. N.
RATIONAL REGULATION OF THE TRACTION ELECTRIC MOTOR OF A THERMO-LOCOMOTIVE. [1961] [11]p. (4 figs. omitted) 3 refs. AERDL T-896; RIS E 654.
Order from OTS or SLA $1.60 62-13277

Trans. of [Vestnik Elektropromyshlennosti] (USSR) [1960] v. 31, no. 1, p. 50-55.
Also available from RIS $18.00 as RIS E 654.

DESCRIPTORS: *Locomotives, *Electric motors, Electrical equipment, Voltage, Heating, Electric terminals, Thermoelectricity.

Ruhlmann, Henri.
TRAINS ON PNEUMATIC TIRES ON THE PARIS METROPOLITAN RAILWAY (Les Trains sur Pneumatiques du Chemin de Fer Metropolitain de Paris). [1962] 50p.
Order from SLA $4.60 62-16594

Trans. of Revue Générale des Chemins de Fer (France) 1954, v. 73, Apr, p. 173-191.

DESCRIPTORS: *Railroads, *Tire tubes, France *Vehicle wheels, Transportation, Passenger vehicles,

Ryazantsev, B. S.
SOVIET REPORT ON U. S. RAILROAD SIGNALING AND COMMUNICATIONS. 2 Mar 62 [63]p. JPRS: 12761.
Order from OTS or SLA $5.60 62-23337

Trans. of Avtomatika, Telemekhanika i Svyaz' (USSR) 1961 [v. 5] no. 11, p. 42-47 and no. 12, p. 37-43.

DESCRIPTORS: Transportation, *Railroads, Signals, *Communication systems, *Automation.

For the purpose of acquainting themselves with the operation and equipment of American railroads a delegation of Soviet railroad specialists visited the United States of America in November and December, 1960. Freight business on almost all lines is considerably lower than possible. This is reflected in the incomes of the companies and influences the development of technology (improvement of automatic control and communications systems and introduction of new systems are not stimulated). The quality of technical maintenance of automatic and communications equipment of American roads is moderate. There is no strict system of maintenance of equipment. In this field nothing is to be learned from the Americans. The staff for maintenance of signalling and communications equipment is proportionately smaller than that on the railroads of the USSR. The low level of technical maintenance of equipment is primarily a result of a lack of workers, although there is an abundance of mechanical equipment, which contributes considerably to a reduction in staff. The combination in a single organization of design and manufacturing facilities for automatic railroad equipment has many positive features.

MATERIALS

Gvozdev, A. A., Mikhailov, K. V., and Nikula, I.
PLASTIC-BONDED FIBERGLASS AS REINFORCEMENT FOR CONCRETE COMPONENTS (Armatura iz Stekloplastkov dlya Armirovaniya Betonnykh Konstruktsii) tr. by G. N. Gibson. Dec 60 [12]p. DSIR Library Communication no. 1021; [DSIR NLL] M. 3261.
Order from OTS or SLA $1.60 62-24611

Trans. of Beton i Zhelezobeton (USSR) 1960, no. 3, p. 105-111.

DESCRIPTORS: *Reinforced concrete, *Reinforcing materials, *Glass textiles, Plastics, Bonding, Reinforcing steel, Laminates, Construction materials industry.

The design of concrete components with non-metallic reinforcement, on a basis of fibreglass, is technically quite possible. Components of this kind can be used economically and suitably even now where steel reinforcement for various reasons cannot be used. Reinforcement in the form of glass plastics cannot, for economic reasons, for quite a considerable time, compete with steel reinforcement for components working under the usual conditions. (Author)

Lazarev, A. I.
A NEW TYPE OF SYNTHETIC RESINS, XYPHTHALS, AND COATINGS FROM THEM. [1961] [1]p.
Order from OTS or SLA $1.10 62-10818

[Condensed] trans. of Khim[icheskaya] Prom[yshlennost' (USSR) 1945, no. 3, p. 14-16.

DESCRIPTORS: *Plastics, *Coatings, Phthalic anhydrides, Xylose, Resins, Plastic paints.

Vironnaud, L.
THE EARLY STAGES OF CONCRETE (Le Premier Age du Beton) tr. by D. A. Sinclair. Mar 62, 39p. 7 refs. NRCC Technical trans. 1019.
Order from NRCC $2.00 NRCC C-3979

Trans. of Institut Technique du Bâtiment et des Travaux Publics. Annales (France) 1960 [v. 12] no. 154, p. 1003-1016.

DESCRIPTORS: *Concrete, Exposure, Ventilation, Fracture (Mechanics), Coatings, Construction materials industry, *Cements, *Mortar, Modling, Test methods

Ceramics and Refractories

Berg, S. A.
BASIS AND METHODS FOR THE QUALITY CONTROL OF BOTTLES (Grunnlag og Metoder for Kvalitetskontroll av Flasker). [1962] [57]p. (foreign text included).
Order from SLA $5.60 62-10928

Trans. of Glasteknisk Tidskrift (Sweden) 1956, v. 11, no. 6, p. 159-175.

DESCRIPTORS: *Glass, *Containers, *Standards, Control, Manufacturing methods.

Bortaud, P.
ELECTRO-CAST REFRACTORY PRODUCTS. Aug 62.
Order from BISI £6 BISI-2707

Trans. of Centre de Documentation Siderurgique. Circulaire d'Informations Techniques (France) 1961 [v. 18] no. 3, p. 757-778.

DESCRIPTORS: *Refractory materials, *Casting

Eden, Carsten.
SUPERSONIC DEGASIFICATION OF GLASS MELTS IN THE HIGH FREQUENCY INDUCTION FURNACE (Ultraschall-Entgasung von Glasschmelzen im Hochfrequenzinduktionsofen). [1962] [12]p. (foreign text included) 3 refs.
Order from SLA $1.60 62-16130

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1952, v. 25, no. 3, p. 83-86.

DESCRIPTORS: *Supersonics, *Degasification, *Glass, Crucibles, Diffusion, Sound, Velocity, Wave characteristics, *Induction heating, Furnaces.

A report is made on attempts to degasify glass melts effectively on a laboratory scale by supersonics. In order to avoid the difficulties of the supersonic transmission with quartz or magnetostriction emitters onto glass melts, the melt crucible was exposed to periodic, electrodynamic forces in the high frequency furnace. This deals with extracts from a work which was carried out in the Technical-Physical Jena Institute under the direction of Prof. Dr. Eckardt in the years 1948-1950. (Author)

Geffcken, Walter.
PROPAGATION OF HEAT IN GLASS AT HIGH TEMPERATURES, PT. 1 (Zur Fortleitung der Wärme in Glas bei Hohen Temperaturen. 1. Tiel). [1962] [14]p. (foreign text included) 5 refs.
Order from SLA $1.60 62-16131

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1952, v. 25, no. 12, p. 392-396.

DESCRIPTORS: *Glass, Propagation, Heat, Thermal radiation, Blackbody radiation, Thermal diffusion, Energy, Iron, *Heat transfer.

The equations for the state of stationary thermal radiation are derived for a transparent body, infinitely extended three-dimensionally and having a temperature gradient in one dimension. At sufficiently low heat flow, i.e. low temperature gradient, a heat conduction coefficient sigma can be correlated to the radiation. Sigma can be expressed explicitly and contains only the spectral absorption values of the glass and radiation values of the black body. For utility glass and window glass, sigma starts to rise steeply at about 700 deg C, and at 1200 deg C sigma values of about 40 Cal m^{-1} hr^{-1} are reached, such as metals have. For the more absorbent x-ray shield glass sigma stays at about 7 Cal m^{-1} hr^{-1}. The great importance of the Fe^{II} content for heat flow in glass is pointed out. (Author)

Ginzburg, L. B.
HEAT CONDUCTIVITY OF THE GLASS MASS (Teploprovodnost' Steklomassy). [1962] [10]p. (foreign text included) 2 refs.
Order from OTS or SLA $1.10 62-16152

Trans. of [Steklo i Keramika] (USSR) 1947, v. 4, no. 7, p. 9-11.

DESCRIPTORS: *Heat transfer, *Glass, Equations of state, *Permeability, Thermodynamics, Calorimeters, Furnaces, Fluid flow, Temperature, Distribution.

In experiments it was possible to approach the practical conditions of heat transmission of glass mass from gas flames and brick and at the same time create the conditions which prevent the occurrence of convectional flows of glass mass, and, consequently, to eliminate the influence of this factor on the transfer of heat. The value of the coefficient of heat conductivity of molten glass under the conditions of heating by gas flames and absence of convectional flows of glass mass for technical transparent glasses at 1000-1300 deg is of the magnitude of 2.2.5 kcal/m.hr.deg. The passage of radiation of the flames and brick and the radiation of the glass are not the cause of a very great decrease in the value of the coefficient of heat conductivity, as determined in tank furnaces. These determinations are the result of the temperature gradients measured independently of each other, and of the heat flow. There was developed an equation of the temperature distribution in the glass layer, which takes into account the influence of the various active factors. (Author)

Hinz, Wilhelm.
VITROCERAM (Vitrokeram). [1962] [15]p. (foreign text included) 13 refs.
Order from SLA $1.60 62-14487

Trans. of Silikat Technik (East Germany) 1959, v. 10, no. 3, p. 119-122.

DESCRIPTORS: *Ceramic materials, *Glass, Production, Crystallization, Metals, Additives.

Joos, Peter.
THE MICROHARDNESS OF GLASS SURFACES (Über die Mikrohärte von Glasoberflächen). [1962] [20]p. (foreign text included) 26 refs.
Order from SLA $1.60 62-16409

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1957, v. 9, no. 11, p. 556-561.

DESCRIPTORS: *Glass, *Hardness, *Microstructure, *Deformation, Thickness, High temperature research, *Vacuum furnaces, Water, Adsorption, Absorption, Density, Plasticity.

Kaller, Adolf.
ON THE POLISHING THEORY OF GLASS (Zur Poliertheorie des Glases). [1962] [58]p. (foreign text included) 61 refs.
Order from SLA $5.60 62-16413

Trans. of Silikat Technik (East Germany) 1956, v. 7, no. 10, p. 380-390 and 399.

DESCRIPTORS: *Glass, Electrolytic polishing, Water, Surfaces, Chemical reactions, Optical glass, Theory

In the first part of the work, all known polishing theories are discussed critically. After it has been found that none is capable of satisfactorily interpreting the polishing process, our own realizations regarding the polishing process are summarized in a new theory; according to it the polishing process is seen as a complicated superimposition of chemical reactions between the water, the glass surface, the polishing pitch

and the polishing agent. Physical processes participate only indirectly in the polishing process, whereby however thermoplastic smoothing effects do not occur, in contrast to the opinions held to date. (Author)

Laethem, R. van, Leger, L. and others.
MEASUREMENT OF THE RADIATION OF GLASS USING THE BOLOMETER: APPLICATION TO THE MEASUREMENT OF THE TEMPERATURE (Mesure de la Radiation du Verre par Bolometre: Application a la Mesure de Temperature). [1962] [54]p. (foreign text included) 4 refs.
Order from SLA $5.60 62-16411

Trans. of Glastechnische Berichte (West Germany) 1959, v. 32K, p. II/36-II/49.

DESCRIPTORS: *Glass, Temperature, Heat transfer, *Infrared radiation, Infrared detectors, *Bolometers, Pyrometers, Furnaces.

The temperature distribution in glass circulating in a tank is very variable. It often happens that the temperature at the surface is lower than that at a certain depth. If the optical arrangement of the bolometer is suitably it is possible to measure the radiated energy and analyse it to some extent. By applying recent results relating to heat transfer in semi-transparent substances and by using filters of known absorption characteristics together with interference filters it is possible to measure the emitted radation. The method permits the formulation of theories regarding temperature distribution over the surface and in depth. Apparatus of small dimensions has been developed, which can be inserted in the furnace on a support tube. The design of this bolometer permits the method to be used over a wide temperature range, especially between 300 and 1200°C. (Author)

Meyer, Fr.
THE POSSIBILITIES OF MANUFACTURING VITREOUS-CRYSTALLINE OBJECTS FROM GLASS (Über die Möglichkeiten der Herstellung Glasig-Kristalliner Gegenstände aus Glas). [1961] [28]p. (foreign text included).
Order from SLA $2.60 62-14504

Trans. of mono. Beitrage zur Augewandten Glasforschung, Stuttgart, 1959, p. 121-132.

DESCRIPTORS: *Glass, Manufacturing methods, Nuclei, Crystals, Growth, Nucleation.

It is shown that the rates of nuclei formation and of crystal-growth are essential factors in the development of such glassy-crystalline materials. Whereas the rate of nucleation in a melt may be increased to the required degree by adding small quantities of heterogeneous nucleating agents, a modification to the rate of crystal growth can be achieved only by a change in the fundamental composition of the glass. Several suitable nucleating agents are mentioned. Brief reference is made to the Pyroceram process. (Author)

Paetsch, Hans Hermann and Dietzel, Adolf.
INVESTIGATIONS ON THE PbO-SiO_2-P_2O_5 SYSTEM (Untersuchungen über das System PbO-SiO_2-P_2O_5). [1962] [47]p. (foreign text included) 42 refs.
Order from SLA $4.60 62-16461

Trans. of Glastechnische Berichte (West Germany) 1956, v. 29, no. 9, p. 345-356.

DESCRIPTORS: *Glass, *Phosphate glass, *Silicates, *Lead compounds, Oxides, Microstructures, X-ray diffraction analysis

The PbO-rich corner of the three-substance system PbO-SiO_2- P_2O_5 was examined with thermal, microscopic and X-ray methods. The results available from the binary systems PbO-SiO_2 and PbO-P_2O_5 were confirmed in general and supplemented in part. The ternary system is characterized by a wide region of dissociation and by the appearance of a ternary compound 5 PbO· P_2O_5· SiO_2 with a large field of primary separation. A ternary phase with the composition 16 PbO· P_2O_5· 2 SiO_2 seems to form only below the liquidus temperature by reaction in the solid state.-The investigated system was compared with other ternary systems with two network producers and particularly with the analogous system CaO-SiO_2- P_2O_5. In the interpretation of the regularities found on the one hand and striking differences in analogous systems on the other hand, there were taken into account besides considerations on energy and crystal-chemical geometry also the R-O bond character in the different glass oxides. (Author)

Peyches, Ivan.
THE PHYSICAL BASES OF THE ELECTRIC MELTING OF GLASS (Les Bases Physiques de la Fusion Électrique du Verre). [1962] [40]p. (foreign text included) 27 refs.
Order from SLA $3.60 62-16467

Trans. of reprint of Revue Générale de l'Électricité (France) 1946, v. 55 [no. 4] p. 143-151.

DESCRIPTORS: *Glass, Melting, Temperature, Conductivity, Electrolytic cells.

Scholze, Horst and Dietzel, Adolf.
INVESTIGATIONS ON THE WATER CONTENT OF GLASSES THROUGH DETERMINATION OF THE INFRARED ABSORPTION IN THE RANGE FROM 1 TO 5 mu (Untersuchungen über den Wassergehalt von Gläsern durch Bestimmung der Ultrarot-Absorption im Bereich von 1 bis 5 μ). [1962] [21]p. (foreign text included) 42 refs.
Order from SLA $2.60 62-10945

Trans. of Glastechnische Berichte (West Germany) 1955, v. 28, no. 10, p. 375-380.

DESCRIPTORS: *Water, *Glass, *Infrared radiation, *Absorption, Iron, Sodium, Calcium, Hydroxides, High temperature research.

A literature compilation is given on the infrared absorption of glasses in the range from 1 to 5 mu, with special regard for the bands produced by OH- or

$(CO_3)^{2-}$ groups. Our own experiments showed that with increasing moisture content of the furnace atmosphere the water content of a simple soda-lime glass rose, as could be recognized by the OH band at 2.95 mu. Glasses which were fused with crystal soda instead of dry soda had still higher water contents.

Scholze, H.
THE TRANSMISSION OF GLASSES IN THE NEAR INFRARED AT TEMPERATURES UP TO FREEZING POINT (Die Durchlässigkeit von Gläsern im Nahern Ultrarot bei Temperaturen bis zum Einfrierbereich). [1962] [15]p. (foreign text included) 17 refs.
Order from SLA $1.60 62-16142

Trans. of Glastechnische Berichte (West Germany) 1959, v. 32K, p. VII/1-VII/5.

DESCRIPTORS: *Glass, Optics, Transmission, Infrared radiation, *Infrared spectroscopy, *Temperature, Hydroxides, Silicon compounds.

The transmission of glasses in the near infra-red depends on the bands at 2.7 2.9 μ due to free OH-groups, and of bands at 3.3 3.9 μ and 4.25 μ due to bound OH-groups. The intensity of radiation in these bands decreases with rising temperature. Whereas the position of the 2.7–2.9 μ band remains constant, the bands at 3.3–3.9 μ are displaced towards the shorter wave-length, because of the widening of the glass structure. A re-arrangement of the bound OH-groups into free OH-groups occurs as well, so that an increase in the bands at 2.9 μ may be noticed when bound OH-groups exist. This rearrangement may be regarded as a chemical equilibrium, so that out of its dependence on temperature the heats of reaction can be found. They are about 3 Kcal./Mol at room temperature and attain a value of about 5 Kcal./Mol at softening point as required by the theory, and remain constant at higher temperatures. It is now possible to calculate from the infrared spectrum at room temperature, the infrared spectrum up to about 4 μ at high temperatures. (Author)

Tetterode, Floris van and Gruil, Jan de.
PROCESS FOR REINFORCING SHEETS OF GLASS: PANES AND OTHER SHEETS OF GLASS OBTAINED BY THIS PROCESS. [1962] [11]p.
Available on loan from SLA 62-18141

Trans. of Belgian patent 565,739, by Glasindustrie F. van Tetterode, 4 Mar 58 (priorities: Holland, patent appl. filed 16 Mar 57 and 11 Dec 57, under nos. 215,442 and 223,151).

DESCRIPTORS: *Glass, Reinforcing materials, *Silicones, Butanols, Sterates

The present invention relates to a process for reinforcing sheets of glass by exposing their surfaces to the action of a mordant. The invention also applies to a process for re-treating these glass sheets thus reinforced and it, finally, applies to panes and sheets of glass obtained by this reinforcement and this later treatment. The process according to the invention is characterized by the fact that, in order to operate the attack by the mordant, a substantial and continual movement is imparted to it with respect to the surface of the glass until a thickness of glass of at least 30 microns has disappeared. In most cases it is preferable to remove at least 40 microns; in many cases between 70 and 80 microns must be removed.

Troshchenko, V. T.
SOME QUESTIONS ON THE STRENGTH OF SILICON CARBIDE BASED METALLOCERAMIC MATERIALS, tr. by E. Bevitt. 1961 [8]p. 5 refs. DEG Inf. Ser. 176(CA); DSIR [NLL] M. 4655.
Order from OTS or SLA $1.10 62-25394

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 1, p. 103-107.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 61-19387, MCL-640, 9 Dec 60 [7]p.

DESCRIPTORS: *Ceramic materials, Mechanical properties, *Carbides, *Silicon compounds, Stresses, Fracture (Mechanics).

For abstract see Technical Translations 5: 568, 1961.

Wille, R.
AIR COOLING OF GLASS MOLDS (Luftkühlung von Glasformen). [1962] [27]p. (foreign text included) 9 refs.
Order from SLA $2.60 62-16410

Trans. of Glastechnische Berichte (West Germany) 1959, v. 32K, p. II/26-II/32.

DESCRIPTORS: *Glass, Molding, Heat transfer, Air cooled, Cooling.

The report summarizes experiments dealing with the transfer of heat from the outside wall of a glass mould to the cooling air. The experiments were performed with stationary, heated models corresponding to average working moulds in dimensions, heat loading and temperatures. The cooling air energy was studied for smooth moulds and circular jets by varying the quantity of air and the jet velocity. In addition to minimum requirements of cooling air, a proportionality relationship was determined between the latter and the heat transferred. For the exponent of this function, which also depends on the heat transfer from glass to mould, it was only possible to deduce an upper limit from the experiments with models. An approximate numerical value for it could be estimated from studies on a working mould. In a second series of experiments the mutual arrangement of mould and jet and the shape of the latter were varied and the influence of cooling spines studied. In each case the cooling air energy for a given transfer of heat was determined and combination of relevant factors worked out, which diminished the cooling air required by ca. 75% compared with the combination smooth mould-circular jet. (Author)

Fuels, Lubricants, and Hydraulic Fluids

ENGINEERING PHYSICS JOURNAL, 1961, VOL. 4, NO. 1: SELECTED ARTICLES. 6 Feb 62 [25]p. 10 refs. FTD-TT-61-158; AD-271 822.
Order from OTS or SLA $2.60 62-19653

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 1, p. 14-21 and 37-43.

DESCRIPTORS: *Turbulent flow, Gases, Axially symmetric flow, Chemical reactions, Combustion, Gas flow, Heat transfer, Laminar boundary layer, Enthalpy, Cylindrical bodies.

Contents:
The rates of chemical reactions in turbulent flows, by A. S. Predvoditelev
Effect of enthalpy recovery on the surface of a cylinder past which flows a high-velocity gas stream, by E. V. Shishov.

NEWS OF THE HIGHER EDUCATIONAL INSTITUTES, AVIATION TECHNOLOGY, 1958, NO. 2: SELECTED ARTICLES. 9 Feb 62 [57]p. 18 refs. FTD-TT-61-45; AD-271 831.
Order from OTS or SLA $5.60 62-19258

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1958, no. 2, p. 74-85 and 93-111.

DESCRIPTORS: *Rocket fuels, Hydrogen compounds, Nitrogen compounds, Fluorides, Thermodynamics, *Injectors, Air ejectors, Orifices, Spray nozzles, *Centrifugal pumps, Cavitation, Mathematical analysis, Mathematical prediction, Theory, Tests.

Contents:
Universal method of calculating thermodynamic characteristics of rocket fuels, by V. E. Alemasov and A. P. Tishin
Calculation of gas ejector, by I. I. Kalmykov
Some results of testing high speed centrifugal pumps, by B. V. Ovsyannikov and Chebaevskii.

Goroshko, V. D., Todes, O. M., and Yurovskii, A. Z.
ON THE BROADENING OF THE POSSIBILITIES OF USING PENETRATING RADIATION TO ENRICH COAL. [1960] 5p. 2 refs. MDF G-189.
Order from OTS $0.50 62-11536

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhinicheskikh] N[auk]. Izvestiya: Met[allurgiya] i Topl[ivo] 1960, no. 4, p. 185-186.

DESCRIPTORS: *Coal, Radiation effects

A theoretical analysis indicates two basic possibilities for eliminating the influence of the chunk thickness x on the reading of the checking device. Both these methods of cancelling the influence of the nonuniformity of the chunks, the double-beam and single-beam methods, were checked in the laboratory. (Author)

Mikhailov, I.
GAS OF HIGHLY CALORIFIC VALUE FROM PEAT OILS. [1962] 2p.
Order from OTS or SLA $1.10 62-14617

Trans. of Novosti Tekhniki (USSR) 1941, v. 10, no. 8, p. 38-39.

DESCRIPTORS: *Gasoline, *Peat, Oils, Pyrolysis, *Gas generating systems.

Ragozin, N. A.
JET PROPULSION FUELS, tr. by W. E. Jones. 1961, 1v.
Order from PP

Trans. of mono. [Reaktivnye Topliva, Moscow, 1959]. A partial trans. is available from OTS or SLA $1.60 as 61-28367, AF-1 419 605, 23 May 60 [15]p.

DESCRIPTORS: *Jet engine fuels, Aviation fuels, Gasoline, Kerosine, Hydrocarbons, Chemical analysis, Fractionation, Reaction kinetics, Crystallization, Temperature, Tables, Jet engines, Jet planes, Fuels

Leather and Textiles

INDUSTRIAL LEATHER. Mar 62 [26]p. RTS 1921.
Order from OTS or SLA $2.60 62-25107

Trans. of Soviet State Standard GOST 1898-48, gr. M 11 (superseding State Standard GOST 1898-42) approved 15 Mar 48, effective 1 June 48.

DESCRIPTORS: *Leather, Organic materials, *Standards, Processing, Manufacturing methods.

A PROCESS FOR SPINNING RAYON FROM VISCOSE OF A HIGH DEGREE OF POLYMERIZATION. 10 Oct 61, 7p.
Order from OTS or SLA $1.10 62-14308

Trans. of Belgian patent 593,672, by Tachikawa Research Institute (priority: appl. filed Japan, 2 Nov 59, under 34, 256).

DESCRIPTORS: *Rayon fibers, Production, *Cellulose, Polymerization, Sulfuric acid, Wood pulp. Temperature, Synthetic fibers.

Viscose of high viscosity is obtained from cellulose of a high degree of polymerization and spun into a spinning bath containing an amount of sulfuric acid lower than 30 g/liter. The temperature of the spinning bath is higher than 30°C and the $ZnSO_4$ content of this spinning bath is increased to a value ranging from 0.2 to 2.0 g/liter as a function of the increase in temperature of the spinning bath.

SEPARATION OF FIBERS EMPLOYING SUPERSONIC OSCILLATION. [1962].
Order from K-H $5.00 K-H 11252

Trans. of [published] Japanese patent 1955-2151.

DESCRIPTORS: *Fibers, Separation, *Oscillation, *Supersonics, Textiles.

Bayer, Zdenek.
A METHOD FOR MEASURING ELECTROSTATIC CHARGE IN TEXTILES (Metoda Mereni Elektrostatickeho Naboje na Textiliich). [1962][10]p. (foreign text included) 2 refs.
Order from SLA $1.10 62-14310

Trans. of Textil (Czechoslovakia) 1959, v. 14, p. 11-12.

DESCRIPTORS: *Textiles, *Electrostatic generators, *Static electricity, Measurement, Fibers.

An apparatus is described that was constructed for the measurement of electrostatic charge. The apparatus rubs the selected material together, and by use of a measuring pistol with an electron tube, the generated charge is measured.

Capuccio, V., Coen, A. and others.
FIBERS FROM ISOTACTIC POLYPROPYLENE.
Aug 62, 5300 words, 22 refs.
Order from CTS(Chem) $21.20 CTS(Chem)-292
subsequent copies $3.50/ea.

Trans. of [Ia] Chimica e [l']Industria (Italy) 1962, v. 44, no. 5, p. 463-473.

DESCRIPTORS: *Synthetic fibers, *Polymers, *Propenes, Physical properties, Crystal structure, X-ray diffraction analysis.

Senner, Paul.
ANTISTATIC COMPOUNDS FOR POLYAMIDES: THEIR CHEMICAL COMPOSITION AND EFFECTS, PT. I. [1962] [16]p. 20 refs.
Order from SLA $1.60 62-14294

Trans. of Rayonne et Fibres Synthetiques (Belgium) 1959 [v. 15] no. 10, p. 1125-1132.

DESCRIPTORS: *Amides, *Polymers, *Synthetic fibers, Processing, *Static electricity, Electrostatic generation, Countermeasures, Textiles, Electrical properties.

Senner, Paul.
ANTISTATIC COMPOUNDS FOR POLYAMIDES: THEIR CHEMICAL COMPOSITION AND EFFECTS, PT. II. [1962] [22]p. 12 refs.
Order from SLA $2.60 62-14295

Trans. of Rayonne et Fibres Synthetiques (Belgium) 1959 [v. 15] no. 11, p. 1285-1293.

DESCRIPTORS: *Amides, *Polymers, *Synthetic fibers, Processing, *Static electricity, Electrostatic generation, Countermeasures, Textiles, Electrical properties.

Preliminary orientation experiments showed that the electric charge actually generated during the rubbing process is independent of the running speed. The charge actually measured gives, in the zone of medium speeds, a very inclined ascending curve and, in the zone of higher speeds, a curve which approaches asymptotically a limiting value. The relationship between the frictional pressure and the value of the charge is simple: as the pressure increases, the value of the charge increases linearly. The temperature influences the value of the charge: An increase in heat applied to the thread causes, after rubbing, the electrostatic charge to increase. (Author) (See also 62-14294)

Senner, Paul.
ANTISTATIC COMPOUNDS FOR POLYAMIDES: THEIR CHEMICAL COMPOSITION AND EFFECTS, PT. III. [1962] [26]p. 2 refs.
Order from SLA $2.60 62-14296

Trans. of Rayonne et Fibres Synthetiques (Belgium) 1960 [v. 16] no. 1, p. 79-88.

DESCRIPTORS: *Amides, *Polymers, *Synthetic fibers, Processing, *Static electricity, Electrostatic generation, Countermeasures, Textiles, Electrical properties.

See also 62-14295

Urbanczyk, Gregor W.
CONTRIBUTION TO THE QUESTION OF THE DEPENDENCE BETWEEN THE IMPACT TENSILE TEST STRENGTH AND SUBMICROSCOPIC ORIENTATION OF THE POLYCAPROLACTAM FIBER. [1962] 11p. (5 figs. 3 tables omitted) 10 refs.
Order from SLA $1.60 62-16712

Trans. of Faserforschung und Textiltechnik (Germany) 1958, v. 9, no. 11, p. 488-493.

DESCRIPTORS: *Synthetic fibers, *Polymers, Tensile properties, Molecular association, X-ray Diffraction analysis.

The impact tensile strength and the static strength of differently drawn poly-caprolactam fiber samples are investigated. The results are compared with the degree of orientation of the molecules in the fiber, determined by X-ray investigation and with the differences in the light birefringence in the corresponding fiber samples. The connections of the values obtained are discussed. (Author)

Photographic Materials

Dietzgen, Joseph E. and Thomiszer, Hubert J.
IMPROVEMENT OF METHODS FOR MAKING COPIES OF GRAPHIC ORIGINALS. [1962] 23p. (14 figs. omitted).
Order from OTS or SLA $2.60 62-16197

Trans. of Belgian patent 605,810, by Eugene Dietzgen Co. [U. S. A.] filed 6 July 61 (Priority: U. S. A. 7 July 60).

DESCRIPTORS: Printing, *Pictures, Reproduction, *Photographic paper, *Photoconductive film, Infrared radiation, Sensitivity, Ultraviolet radiation

A method is described for making the copy of a graphic original on a copying sheet sensitive to radiation, containing a diazo compound and a binding composition and being capable to being converted into a stable visible state upon exposure to ammonia, said sheet containing also a developing composition capable of emitting ammonia when it is heated. The method consists of placing the copying sheet together with the graphic original in order to form a sandwich and, by irradiating the sandwich with infrared rays, heating thus the

localized zones that carry the graphic material of the original to make of them heat sources of a temperature that is sufficient to cause the liberation of ammonia in the areas of the copying sheet determined by the heated areas of the original in order to develop said areas of the copyi ng sheet into a state that is visually contrasting to the remaining portions of the sheet.

Dönenburg, E. and Hintenberger, H.
ON THE BLACKENING OF PHOTOGRAPHIC PLATES BY IONS OF CARBON MOLECULES OF DIFFERENT WEIGHT. [1962] 24p. 4 refs.
Order from SLA $2.60 62-14231

Trans. of Zeit[schrift für] Naturforschung (West Germany) 1961, v. 16a [no. 7] p. 676-685.

DESCRIPTORS: *Carbon, Isotopes, Ions, *Photographic plates, Autoradiography, Exposure, Spectrographic analysis.

Iordowski, A. N.
SPECTROZONAL PHOTOGRAPHY AND SPECTROZONAL FILMS. [1962] [8]p. 4 refs.
Order from OTS or SLA $1.10 62-10968

Trans. of [Akademiya Nauk SSSR]. Lab[oratoriya] Aerometod[ov]. Trudy, 1959, v. 7, p. 25-31.

DESCRIPTORS: *Aerial photography, Color photography *Photographic film, Spectrographic analysis.

Lyalikov, K. S., Petrushkina, Z. L., and Nomokonova, V. F.
A COMPARISON OF THE RESOLVING POWER AND "SHARPNESS" OF TWO AERIAL PHOTOGRAPHY FILMS. [1962] 4p.
Order from ATS $7.00 ATS-84P61R

Trans. of Zhur[nal] Nauch[noi] i Priklad[noi] Fot-[ografii] i Kinematografii (USSR) 1961, v. 6, no. 6, p. 418-420.

DESCRIPTORS: *Aerial photography, *Photographic film, Resolution (Optics).

Nagami, H., Ishida, M., and Okuno, T.
SOME PROBLEMS OF XERORADIOGRAPHY. [1962] 10p.
Order from ATS $12.95 ATS-96P61J

Trans. of Denshi Shashin (Japan) 1961, v. 3, no. 2, p. 32-37.

DESCRIPTORS: *Electrophotography.

Stewart, Paul Harold, Fallesen, George Earle, and Reeves, John Watson.
NEW PHOTOGRAPHIC PRODUCT AND PROCESS FOR TREATMENT OF THIS PRODUCT. [1962] 27p. (illus. omitted).
Order from OTS or SLA $2.60 62-14893

Trans. of French patent 1, 257, 893, P. V. 823, 966, internat. cl. G 03 c, by Kodak-Pathe, appl. 9 Apr 60, granted by law of 27 Feb 61 (pat. appl: U. S. A. 10 Apr 59 under no. 805, 582) (Bulletin Officiel de la Propriété Industrielle (France) 1961, no. 14).

DESCRIPTORS: *Photographic emulsions, *Photographic chemicals, Photosensitivity, Sensitivity, *Pyrazolones, Photographs, Processing.

Waidelich, Wilhelm.
RELATIONSHIP BETWEEN THE STRUCTURE OF SILVER BROMIDE GRAINS AND THE SENSITIVITY OF PHOTOGRAPHIC EMULSIONS. [1962] 21p. (refs. omitted).
Order from SLA $2.60 62-16692

Trans. of Zeitschrift für Angew[andte Physik (West Germany) 1958, v. 10, [no. 11] p. 525-531.

DESCRIPTORS: *Photographic emulsions, Photographic paper, Photographic film, *Silver compounds, *Bromides, *Crystal structure, X-ray spectroscopy, Sensitivity

By precision measurements of the half-value width of Debye-Scherrer lines of photographic emulsion grains, the sizes of the coherent grid ranges were determined. There is a relation between the size of coherent ranges and sensitivity: The higher the sensitivity is, the smaller is the size of the coherent ranges. Because of the presence of other influences, as, for example, the size of the emulsion grains, the connection is only stochastic when all the emulsions are compared. A comparison of similar emulsions, however, gives very nearly smooth curves with a slight scattering of the points. We infer from these results the conclusion that the inner latent image arises mainly on "inner surfaces", the limits of the homogeneous grid ranges. This can be understood as meaning that in the interior of an undisturbed AgBr grid there is no place for a growing center. By separate developing of the inner image and the surface image it was possible to show that the number of inner development centers is all the higher, the more inner surfaces are present. (Author)

Zelikman, V. L.
METHODS FOR HARDENING PHOTOGRAPHIC EMULSIONS: LITERATURE SURVEY. [1962] 17p. 73 refs.
Order from OTS or SLA $1.60 62-14466

Trans. of Uspekhi Nauch[noi] Fot[ografii] (USSR) 1960, v. 7, p. 161-169.

DESCRIPTORS: *Photographic film, *Photographic emulsions, Hardening, *Bibliography.

Plastics

GREATER CHEMISTRY OF THE UKRAINE. 26 Mar 62 [3]p. FTD-TT-62-244.
Order from OTS or SLA $1.10 62-24026

Unedited rough draft trans. from Bakinskii Rabochii (USSR) 1961, no. 166, p. 1.

DESCRIPTORS: Chemistry, *Chemical industry, *Polymers, *Ketones, *Pentyl radicals, Additives, Plastics, Plastics industry.

PROCESS FOR THE OXIDATION OF CELLULOSE BY TREATMENT WITH NITROGEN DIOXIDE. [1962].
Order from K-H $6.25 K-H 11071 d

Trans. of German patent 967,144 [pub. 1957].

DESCRIPTORS: *Oxidation, *Cellulose, Cellulose chemistry, Dioxides, *Nitrogen compounds.

Brockett, Bruce W.
CAPSULAR PRODUCT AND ITS MANUFACTURING PROCESS. [1962] 9p.
Order from OTS or SLA $1.10 62-14407

Trans. of [Belgium] patent 601132, JT/CR H.7756, cas 13, by the National Cash Register Co., 9 Mar 61 (priority of pat. appl. filed in U.S.A. 10 Mar 60 under ser. no. 14,011).

DESCRIPTORS: *Chemicals, *Containers, Production, *Ethyl cellulose.

The process consists in the formation of an emulsion of a liquid immiscible in water, which constitutes or bears the first of two chemical reagents, in an aqueous sol of a polymer material capable of forming a pellicle, to effect a coacervation for depositing the polymer material around the droplets of the liquid material, so as to enclose the droplet, and to coagulate the polymer material. This process is characterized by the fact that the coagulated wall is covered with at least a colloidal mineral, which constitutes the second of the two reagents and which is acid with respect to the first reagent.

Hueck-Van der Plas, E. H.
BIOLOGICAL DETERIORATION OF PLASTICIZERS IN PVC (Biologisch Bederf van Weekmakers in PVC). [1962] 10p. 11 refs.
Order from SLA $1.10 62-16592

Trans. of Plastica (Netherlands) 1960, v. 13, no. 12, p. 1216-1219.

DESCRIPTORS: *Vinyl chlorides, Polymers, *Plasticizers, *Microorganisms, *Fungicides, *Plastics, Deterioration, Chlorides.

Künzler, H., Fierz, W., and Grimm, G. O.
COMPARATIVE INVESTIGATION OF PLASTICS AS POTENTIAL BUILDING MATERIALS FOR TELEPHONE SETS. [1962] 69p.
Order from SLA $6.60 62-14470

Trans. of PTT Technische Mitteilungen (Switzerland) 1961 [v. 39] no. 7 [p. 217-243].

DESCRIPTORS: *Plastics, *Telephone receivers, Stability, Resistance, Elasticity.

Lebedev, Yu. and Kudryavtsev, V.
POLYMERS IN THE ELECTROTECHNICAL INDUSTRY. [1961] [1]p. [DSIR NLL] M.4674.
Order from OTS or SLA $1.10 62-19131

Trans. from Ekonomicheskaya Gazeta (USSR) 1961, 12 May, p. 3.

DESCRIPTORS: *Electric insulation, Insulating materials, *Polymers, *Synthetic fibers, Electric machinery, Plastics.

Müller, E.
DECOMPOSITION-POSSIBILITIES AND CHARACTERISTICS OF RETICULATED PLASTICS WITH HIGH HARDNESS AND HIGH ELASTICITY (HARDVULCOLLANE). [1961] 1p.
Order from SLA $1.10 62-14082

Trans. of unidentified German language article, Leverkusen, 1960.

DESCRIPTORS: *Plastics, Hardness, Elasticity, Decomposition.

This appears to be an abstract (or perhaps the introduction) to a longer work.

Schurz, J. and Windisch, K.
RHEOLOGICAL MEASUREMENTS ON CELLULOSE ACETATE AND NATURAL RUBBER (Rheologische Messungen an Celluloseacetat und Naturkautschuk). [1962] [11]p. 9 refs.
Order from SLA $1.60 62-14284

Trans. of Kolloid-Zeitschrift (West Germany) 1961, v. 177, no. 2, p. 149-153.
Another trans. is available from ATS $9.00 as ATS-33N56G [1961] 6p.

DESCRIPTORS: *Cellulose acetates, *Rubber, Measurement, Viscosity.

The flow curves of cellulose triacetate in ethylene chlorohydrin and natural rubber in toluene were drawn. The relation between the point of inflection of the flow curve and the degree of polymerization of the solute was determined for the systems cellulose triacetate/ethylene chlorohydrin. From the temperature dependence of the flow curves, the uncoiling work was obtained for both systems and from that the persistence length according to an empirical relation. (Author)

Vaillant, M.
CHLOROFLUORINE POLYMERS AND THEIR DERIVATIVES. I. GENERICS AND PROPERTIES. [1962] [18]p. 21 refs.
Order from SLA $1.60 62-16732

Trans. of Chim[ie] et Industr[ie] (France) 1958, v. 80, no. 4, p. 429-436.

DESCRIPTORS: Plastics, *Polymers, *Ethylenes, *Fluorides, *Chlorides, Synthesis, Chemical properties, Physical properties.

Votinov, A., Kobeko, P., and Marei, F.
RESEARCH ON POLYMERS. VII. DEPOLYMERIZATION OF LINEAR POLYMERS. [1962] 3p.
Order from OTS or SLA $1.10 62-14640

[Condensed] trans. of Zhurnal Fizicheskoi Khimii (USSR) 1942, v. 16, no. 3/4, p. 106-114.

DESCRIPTORS: *Polymers, Decomposition, *Styrenes, Methyl radicals, *Acrylic resins, Reaction kinetics.

Würstlin, F.
AN ATTEMPTED MOLECULAR EXPLANATION OF EXTERNAL PLASTICIZING OF HIGH POLYMERS. [1962] 11p. (12 refs. omitted) 16 refs.
Order from SLA $1.60 62-16706

Trans. of Kolloid-Z[eitschrift] (West Germany) 1957, v. 152, no. 1, p. 31-36.

DESCRIPTORS: *Polymers, *Plasticizers, Plasticity, Organic solvents, *Thermodynamics.

The conception of a thermodynamic equilibrium existing in every plasticized material between solvated and unsolvated plasticizer molecules arose out of previous measurements on plasticized materials. The equilibrium depends on the nature of the high polymeric substance and the plasticizer, on the concentration of the plasticizer, and the temperature. The unsolvated plasticizer molecules are the ones that diffuse, and they are responsible for all processes of plasticizer migration, electrical direct current conductivity, and so forth. (Author)

Rubber and Elastomers

Kraus, G. and Short, J. N.
NEWER INVESTIGATIONS ON CIS-POLYBUTADIENES. [1962] 2p.
Order from SLA $1.10 62-10570

Trans. of mono. from an unidentified source, n. p., n. d.

DESCRIPTORS: *Polymers, Elastomers, Butyl rubber, *Pentadienes, *Butadienes.

Lynen, F.
ON THE BIOLOGICAL ROAD TO NATURAL CAOUTCHOUC. [1961] 1p.
Order from SLA $1.10 62-14063

Trans. of German language article from unidentified source, n. d.

DESCRIPTORS: *Rubber, *Isoprene, Synthesis, Polymerization.

Starobinets, G. L. and Tikavyi, V. F.
ADSORPTION OF BINARY SOLUTIONS THROUGH BUTADIENE-NITRILE COPOLYMERS. [1962] 7p. 11 refs.
Order from OTS or SLA $1.10 62-14820

Trans. of #Kolloid[nyi] Zhur[nal] (USSR) 1961 [v. 23] no. 1, p. 112-[117].

DESCRIPTORS: *Polymers, *Synthetic rubber, *Nitrile rubber, *Pentadienes, Benzenes, Aliphatic compounds, Alcohols, Hydrocarbons.

A study was made of the sorption of binary systems of the type of solvent-polar nonsolvent (benzene-aliphatic alcohols) and solvent-nonpolar nonsolvent (aromatic hydrocarbons-aliphatic hydrocarbons) by butadiene-nitrile rubber vulcanizates containing 18.26 and 40% acrylonitrile. In systems in which the polar nonsolvent takes part the sorption potential of the solvent diminishes with increasing concentration of the nitrile groups in the polymer, whereas the contrary is true for the nonpolar nonsolvent. A thermodynamic interpretation of the phenomena has been given. The nitrile copolymers have been shown to be highly suitable for separating aromatic and aliphatic hydrocarbon mixtures.

Wood and Paper

Edmondson, Isaac Ernest and Bowden, Albert William.
IMPROVEMENTS IN THE CONSTRUCTION OF HOLLOW PERFORATED CYLINDERS, tr. by L. A. N. 7 May 62, 7p. (4 figs. omitted).
Order from OTS or SLA $1.10 62-25030.

Trans. of French patents 974,767, gr. 4, cl. 7, by British Tyre and Rubber Co. Ltd., appl. 9 Nov 48, granted 4 Oct 50, pub. 26 Feb 51 (appls. filed Great Britain, 10 Nov 47 and 9 Nov 48, per statement of applicant).

DESCRIPTORS: *Cylindrical bodies, Construction, Paper industry, Machines, Industrial equipment.

Jayme, G. and Bergmann, W.
OXYGEN-INSENSITIVE ALKALINE CELLULOSE SOLUTIONS (Über Sauerstoffunempfindliche Alkalische Cellulose-lösungen) tr. by H. A. G. Nathan 1961, 8p. 4 refs. NRCC Technical Trans. 989.
Order from NRCC $0.50 NRCC C-3841

Trans. of das Papier (West Germany) 1956, v. 10, no. 5/6, p. 88-90.

DESCRIPTORS: *Cellulose, Cellulose chemistry, Chemistry, Organic solvents, Viscosity, Measurement, Oxygen, Chemical reactions.

I[v]ano[v], S. N.
INCREASE IN FILLER RETENTION IN PAPER BY USE OF ACTIVATED SILICA. Mar 62, 10p. (10 figs. 4 tables omitted) 9 refs.
Order from SLA $1.10 62-16525

Trans. of article from unidentified Russian (?) source [1961].

DESCRIPTORS: *Paper, Processing, *Additives, *Dioxides, *Silicon compounds.

The technological factors which influence this process are studied and the use of activated silica as flocculant which increases filler retention discussed in detail. (Author)

Gavrilov, M. I.
MOMENT METHOD IN THE THEORY OF NON-LINEAR DIFFERENTIAL EQUATIONS. 19 Feb 62 [8]p. JPRS: 12544.
Order from OTS or SLA $1.10 62-19165

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1961, no. 6, p. 708-712.

DESCRIPTORS: *Non-linear differential equations, Theory, Series, Numerical methods and procedures.

Sufficient conditions are given to solve the equation $d\rho/d\theta = \rho/(\rho, \theta)$ in the form $\rho = \int_0^1 \frac{d\sigma(\tau; \theta)}{\tau + \pi(\theta)\omega}$, where $\pi(\theta) > 0$, ν is a parameter, $\omega = \nu^{\int_0^\theta f(0, \theta)ds}$, $\sigma(\tau; \theta)$ is a nondecreasing function of τ with a limited variation on [0, 1], and $-\infty < \theta < +\infty$.

Gel'man, A. E.
CERTAIN ESTIMATES FOR A FUNCTION SUCH AS $x(t) = \frac{2}{\pi}\int_0^\infty \frac{\sin \omega t}{\omega} R(\omega)\, d\omega$. [1959] 1p.

MDF G-171.
Order from OTS $0.50 62-11440

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Fiz[iko]-matem[aticheskie] Nauki (USSR) 1958, no. 5, p. 29-30.

DESCRIPTORS: *Functions.

Gol'dengershel', E. L.
ON THE GROWTH OF THE SOLUTION OF A CLASS OF SYSTEMS OF VOLTERRA TYPE INTEGRAL EQUATIONS. [1960] 9p. 5 refs. MDF G-183.
Order from OTS $0.50 62-11540

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Matem[atika] (USSR) 1959, no. 6(13) p. 38-43.

DESCRIPTORS: *Integral equations, Theory, *Partial differential equations

The result of M. A. Rutman (Uspekhi Mat. Nauk 12(1): 234-238, 1957) showing that for a broad class of systems of linear partial differential equations the order of growth of the solution coincides with the order of growth of the right sides and the boundary values, if the right sides and boundary values have a sufficiently high order of exponential growth, is transferred to one class of systems of integral equations of the form

$$\varphi(x_1, x_2) - \int_0^{x_1} K_1(x_1, x_2, y_1)\varphi(y_1, x_2)dy_1 \int_0^{x_2} K_2(x_1, x_2, y_2)\varphi(x_1, y_2)dy_2 - \int_0^{x_1}\int_0^{x_2} K_{12}(x_1, x_2, y_1, y_2)\varphi(y_1, y_2)dy_1 dy_2 = f(x_1, x_2),$$

where $0 \leqslant \begin{matrix} x_1 \\ x_2 \end{matrix} < \infty$.

Gur'yanov, I. N.
ON A TEST OF THE CONVERGENCE OF CONTINUED FRACTIONS WITH ANY NUMBER OF CHAINS. [1960] 10p. 4 refs. MDF G-188.
Order from OTS $0.50 62-11537

Trans. of Usp[ekhi] Mate[maticheskikh] Nauk (USSR) 1960, v. 15, no. 2(92) p. 173-180.

DESCRIPTORS: *Continued fractions, Theory.

Kalinina, T. B. and Gol'tsman, F. M.
A COMPUTER FOR THE DETERMINATION OF LINEAR SIGNAL CONVERSIONS. [1962] [10]p. 4 refs. [DSIR] NLL M. 4989.
Order from OTS or SLA $1.10 62-25908

Trans. of Prikladnaya Geofizika (USSR) 1960, no. 28, p. 23-34.
Another trans. is available from OTS or SLA $2.60 as 62-13446, JPRS-10982, 9 Nov 61 [27]p.

DESCRIPTORS: *Digital computers, Computers, Design, Circuits, Tests, Signals, Transformations (Mathematics), Integrals, Statistical functions, Theory.

For abstract see Technical Translations 7: 542-543, 1962.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
MATRIX ALGEBRA. APPLICATIONS. Dec 61, 9p. 100 refs. OTS Selective Bibliography SB-485.
Order from OTS $0.10

DESCRIPTORS: *Matrix algebra, Applied mathematics, Mathematics, *Bibliography

Lists 100 references to reports added to the OTS collection during 1961, which illustrate the use of matrix algebra in mathematical analysis in scientific investigation in a variety of subjects including communications, electrical networks, electronics, infrared research, guided missiles, mathematical statics, plasma physics, vibration, economics and sociology, among others. (Author)

Povarov, G. N.
FUNCTIONAL SEPARABILITY OF BOOLEAN FUNCTIONS. [1962] 6p. 4 refs.
Order from OTS or SLA $1.10 62-16089

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 94, no. 5, p. 801-803.
Other translations are available from CTS (Chem) $4.20 as CTS (Chem)-127 [1960] 1200 words and from OTS $0.50 as 62-11517, MDF-P-118 [1961] 5p.

DESCRIPTORS: *Special functions, Functional analysis.

A criterion for functional separability is obtained and with the aid of this criterion the relation between functionally separable Boolean functions and symmetric Boolean functions is explored. (Author)

Computing Devices

AUTOMATION AND INSTRUMENT MAKING. 20 Aug 62 41p. 6 refs. JPRS: 14899.
Order from OTS $1.25 62-11733

Trans. of Avtomatika i Priborostroenie (USSR) 1962 [v. 1] no. 2, p. 3-6 and 28-45.

DESCRIPTORS: *Automation, Instrumentation, *Industrial production, *Ammonia, *Teletype equipment Computers, *Digital computers, Mathematical computer data.

Contents:
The "autodispatcher" system for ammonia production, by E. V. Kurdyuk and V. A. Afanas'ev
The TsUM-1 digital computer, by G. A. Mikhailov and others
Device for the algebraic multiplication of mixed information with output in pulse-frequency form, by R. G. Karpov
An analysis of multi-stage multiplication and division methods in digital computers, by Z. L. Rabinovich and others
Application of teletype equipment for reading in data in digital computers, by V. I. Vykhovanets and Yu. L. Ivas'kiv.

Bromirski, Jerzy.
THE NUMBER OF DIRECTIONAL ELEMENTS IN DECODING SYSTEMS OF COMPLEMENTARY TYPE. 22 Nov 61 [7]p. JPRS: 11135.
Order from OTS or SLA $1.10 62-19488

Trans. of Archiwum Automatyki i Telemechaniki (Poland) 1961, v. 6, no. 1, p. 33-36.

DESCRIPTORS: *Data processing systems, Data, Coding, Design

The paper gives minimum and maximum limit conditions determining the number of directional elements in decoding systems of complementary type. The possibility is considered of decreasing the number of directional elements by using simplified structural formulas. The ensuing relationships are given. (Author)

Bromirski, Jerzy.
ON A CLASS OF DECODING SYSTEMS. 22 Nov 61 [9]p. JPRS: 11136.
Order from OTS or SLA $1.10 62-19487

Trans. of Archiwum Automatyki i Telemechaniki (Poland) 1961, v. 6, no. 1, p. 39-45.

DESCRIPTORS: *Data processing systems, Design, Data, Coding

The complementary systems method has been extended to include a class of decoders characterized by a small number of directional elements in the system. (Author)

Lebedev, S. A., ed.
MAGNETIC ELEMENTS OF COMPUTER ENGINEERING EQUIPMENT. 20 Aug 62, 286p. 41 refs. JPRS: 14902.
Order from OTS $4.00 62-11734

Trans. of mono. Magnitnye Elementy Ustroistv Vychislitel'noi Tekhniki: Sbornik Statei, Moscow, 1961, 147p.

DESCRIPTORS: *Magnetic materials, *Computers, *Ferrite cores, *Hysteresis, Electromagnetic fields, Polarization, Frequency, *Ferromagnetic materials, *Metal films, *Oscillographs.

Contents:
Static and pulse properties of ferrite cores with rectangular hysteresis loops and methods of measurement, by V. V. Bardizh
Static and pulse properties of micron cores with retangular hysteresis loops, by V. V. Bardizh and others
Hysteresis loops of uniaxial ferromagnetic films, by V. V. Koblev
Domain structure of uniaxial ferromagnetic films, by V. V. Koblev
Instrument for studying the impulse properties of magnetic cores (model S-2) by Yu. I. Vizun
A unit for oscillographing the hysteresis loop of flat ferromagnetic films, by V. V. Kobelev.

Pipko, D.
CRADLE OF ROBOTS. 2 July 62 [19]p. JPRS: 14319.
Order from OTS or SLA $1.60 62-25615

Trans. from Nedelya (USSR) 1962, no. 18.

DESCRIPTORS: *Computers, *Cybernetics, Automation, Control, Machines, Computer logic.

Shenbrot, I. M.
CENTRALIZED CONTROL OF TECHNOLOGICAL PROCESSES (Tsentralizovanyi Kontrol' Tekhnologicheskikh Protessov). 5 July 62 [167]p. 61 refs. JPRS: 14389.
Order from OTS or SLA $12.00 62-25716

Trans. of [Biblioteka po Avtomatike] (USSR) 1961, v. 40, 95p.

DESCRIPTORS: Computers, *Data processing systems, Programming, *Automation, *Control systems, *Digital recording systems, Memory devices, Switches.

This book is devoted to the principles of operation of apparatus for the centralized control of technological processes - apparatus such as have in recent years been intensively developed and introduced into industry; it characterizes the functions fulfilled by such apparatus, examines the basic functional units of centralized-control systems, and describes systems worked out in the Soviet Union and abroad. This book is intended for the use of engineering-technical specialists occupied in the planning, adaptation and utilization of industrial automation apparatus. (Preface)

Sobol', I. M.
PSEUDO-RANDOM NUMBERS FOR THE "STRELA" COMPUTER. June 60 [11]p. 24 refs. BISI Trans. 1753; [DSIR] NLL M. 6353.
Order from OTS or SLA $1.60 62-25696

Trans. of #Teoriya Veroyatnostei i Ee Primeneniya (USSR) 1958, v. 3, no. 2, p. 205-211.
Another trans. is available from BISI 4 as BISI-1753 [1960].

DESCRIPTORS: *Computers, Scheduling, Mathematical computer data, Numerical methods and procedures.

The generation and testing of pseudo-random numbers on the Strela computer (with a floating decimal point) is described. The set of tests used is similar to those of Kendall and Smith (J. Roy. Statist. Soc. 101: 147-166, 1938) and, perhaps, more stringent. The mean length of cycles occurring in any pseudo-random sequence is evaluated. (Author)

MECHANICS

Aksel'rad, E. L.
EQUATIONS OF DEFORMATION FOR SHELLS OF REVOLUTION AND FOR THE BENDING OF THIN-WALLED TUBES SUBJECTED TO LARGE ELASTIC DISPLACEMENTS, tr. by Nicholas J. Hoff. July 62 [5]p. 11 refs.
Order from ARS in Its Journal, v. 32, no. 7, $3.00

Trans. of Akademiya Nauk SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1960, no. 4, p. 84-92.

DESCRIPTORS: *Cylindrical bodies, *Bodies of revolution, *Deformation, Elasticity, Deflection, Differential equations.

Gandin, L. S. and Soloveichik, R. E.
ON THE PROBLEM OF A LAMINAR BOUNDARY LAYER NEAR A POROUS WALL. [1961] 4p. 3 refs. MDF G-138.
Order from OTS $0.50 62-11193

Trans. of Prikl[adnaya] Mate[matika i] Mekh[anika] (USSR) 1956, v. 20, no. 5, p. 663-665.

DESCRIPTORS: *Laminar boundary layer, *Porous materials, Fluid flow, Friction, *Applied mathematics

The problem considered differs from the Blasius problem in that the value of the velocity component in a direction perpendicular to the wall is considered to be a certain given quantity W at this wall and not zero. The equations and the boundary conditions in this case are: $u\frac{\partial u}{\partial x} + w\frac{\partial u}{\partial z} = \nu\frac{\partial^2 u}{\partial z^2}; \frac{\partial u}{\partial x} + \frac{\partial w}{\partial z} = 0; u|_{z=0} = 0;$ $u|_{z=\infty} = U;\ w|_{z=0} = W.$ The approximate method of M. E. Shvets (Prikl. Mat. i Mekh. 13: no. 3, 1949), which permits the solution of the problem to be obtained easily in reviewable form, is used to solve this problem.

Kabulov, V. K.
INVESTIGATION OF THE VIBRATION OF CERTAIN VERY SIMPLE ROD SYSTEMS, APPLYING THE VOLTERRA TYPE INTEGRAL EQUATIONS (K Issledovaniyu Kolebaniya Nekotorykh Prosteishikh Sterzhnevykh Sistem s Primeneniem Integral'nykh Uravnenii Tipa Vol'terra) tr. by Marcel I. Weinreich. 13 Dec 61 [9]p. 2 refs.
Order from OTS or SLA $1.10 SCL-T-393

Trans. of Akademiya Nauk Uz[bekskoi] SSR [Tashkent]. Doklady, 1958, no. 2, p. 5-10.

DESCRIPTORS: *Girders, Vibration, Rods, Deformation, Oscillation, Stresses, Mathematical analysis, *Integral equations.

The oscillations of certain very simple rod systems are analyzed by the methods of the wave theory with the aid of the integral equations of rod vibrations pertaining to the Volterra type. The rods of the system undergo only deformations of compression and elongation (dilation), whereby the phenomenon of a longitudinal bending or flexure is excluded. The forces of inertia arising from the component displacements in a direction which is perpendicular to the rod's axis are disregarded.

Portnov-Sokolov, Yu. P.
ON THE MOTION OF A HYDRAULIC PISTON CONTROL UNDER TYPICAL LOADS. A brief explanation of a report on the Equations of Motion of a Hydraulic Piston Motor Controlled by a Spool-Valve, 1950. [1961] 19p. 11 refs. MDF P-117.
Order from OTS or SLA $1.60 62-19994

Trans. of mono. Collection of Works on Automatics and Telemechanics [Moscow] 1953, p. 18-29.

DESCRIPTORS: *Hydraulic systems, *Pistons, *Control valves, Servomotors, Control, Equations of motion, Load distribution.

There is derived the equations of motion of a hydraulic piston motor (PM) under the action of typical loads when the spool-valve is displaced momentarily from the neutral position to some fixed position and the piston moves to one side until checked by the cylinder wall. The equations are studied in order to construct the phase characteristics of the system for this case. The point is determined, at which the piston speed attains its maximum value; the power developed by the PM is calculated. The effect is shown of certain constructional parameters of the PM and the load on the rapidity of its action. (Author)

Reidelbach, W.
THE STATE OF STRESS IN THE VICINITY OF THE INTERSECTION OF TWO PERPENDICULARLY JOINED CIRCULAR CYLINDRICAL SHELLS (Der Spannungszustand im Übergangsgebiet einer Rechtwinkligen Rohrabzweigung) tr. by D. A. Sinclair. 1962, 38p. 4 refs. NRCC Technical Trans. 1034.
Order from NRCC $2.00 NRCC C-4043

Trans. of Ingenieur-Archiv (Germany) 1961, v. 30, no. 5, p. 293-316.

DESCRIPTORS: *Cylindrical bodies, Shear stresses, Stresses, Joints, Deflection, Elasticity, Theory, *Pipes, Pressure, Distortion, Numerical analysis, Differential equations, Structural shells

Sedov, L. I.
ON THE FUNDAMENTAL PRINCIPLES OF THE MECHANICS OF CONTINUOUS MEDIA, tr. by G. Belkov. 1962, 23p. 1 ref. NRCC Technical Trans. 1031.
Order from NRCC $1.50 NRCC C-4044

Trans. of mono. (lecture) Ob Osnovnykh Printsipakh Mekhaniki Sploshnoi Sredy, Moscow U., 1961, 25p.

DESCRIPTORS: *Continuous media, *Continuum mechanics, Mechanics

Aerodynamics and Pneumatics

Dorfman, L. A.
TURBULENT BOUNDARY LAYER ON A ROTATING DISC. [1961] 6p. (1 fig. omitted) 5 refs. MDF D-127.
Order from OTS $0.50 62-11205

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya, 1957, no. 7, p. 138-142.

DESCRIPTORS: *Turbulent boundry layer, *Disks, Bodies of revolution, Velocity, Mathematical analysis, *Partial differential equations.

The turbulent boundary layer on a disk is computated by starting from a universal logarithmic profile of the velocity distribution in the boundary layer.

Gonor, A. L.
ON THE LOCATION OF THE BOW WAVE IN NONSYMMETRIC HYPERSONIC GAS FLOW AROUND A POINTED BODY [1959] 3p. 2 refs. MDF G-167.
Order from OTS $0.50 62-11449

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: M[ekhanika] i M[ashinostroyenie] 1959, no. 5, p. 117-118.

DESCRIPTORS: *Hypersonic flow, Analysis.

Computations indicated that there exists a Mach number, M, for each cone for which the shock again becomes almost circular and then flattens out against the body more strongly than on the leeward side. This approaches more rapidly for a given Mach number the thicker the cone. The air flow was experimentally studied around six cone models with half-angles $\theta_0 = 15$, 20, 25, 30, 35 and 40^0 at M = 4. Shadowgraphs were made with a Toepler instrument of the compression shocks in the flow-symmetry plane. The shock angles were measured by (1) projection of the negative on a screen and outlining the shock-wave and body contours and subsequent measurement with a goniometer, (2) measurement of the angles directly on the magnified photograph, and (3) measurement of the angles with a microscope. The last method appeared to be unsuccessful since there was a great deal of scatter in the processed data on the same experiment. The experimental data indicated that the shock actually has a tendency to enlarge the cone angle to equalize the angles in diametrically opposite planes and then to assume a smaller angle on the leeward side.

Grigoryan, S. S.
ON A PROBLEM OF FINITE SPAN WING THEORY [1961] 5p. 9 refs. MDF G-135.
Order from OTS $0.50 62-11191

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1956, v. 110, no. 3, p. 348-350

DESCRIPTORS: *Wings, Supersonic airfoils, *Supersonic flow, Mathematical analysis, *Integral equations.

The problem consists of solving the system of two integral equations:

$$\iint_{ONMPO} \frac{\theta(\xi,\eta)\, d\xi\, d\eta}{\sqrt{(x-\xi)(y-\eta)}} = 0; \text{ and}$$

$$\iint_{OP'M'N'O} \frac{\theta(\xi,\eta)\, d\xi\, d\eta}{\sqrt{(x'-\xi)(y'-\eta)}} = 0$$

where x, y and x'y' are coordinates of the points M and M' which are in the regions σ_1 and σ_2, respectively, where σ_1 is the region bounded by the y axis and the line 0AB, where A is the first point on the wing profile at which the distance of a point on the profile from the coordinate angle bisector is a maximum when the point moves along the profile from the point 0, and AB is parallel to the y axis. The region σ_2 is defined analogously. In the region occupied by the wing, $\theta(x, y)$ is known, i.e., within the closed contour 0A'A0. (Author)

Khudenko, B. G.
THE CALCULATION OF THE FUNDAMENTAL REGION OF AN AERODYNAMIC TURBULENT WAKE IN CLOSED FLOW. 22 Jan 62 [13]p. 4 refs. FTD-TT-61-135; AD-270 772.
Order from OTS or SLA $1.60 62-15808

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 12, p. 3-10.

DESCRIPTORS: *Bodies of revolution, *Cylindrical bodies, *Aerodynamics, Turbulent flow, Gas flow, Wake, Boundary layer, Theory, Reynolds number, *Vortices, Functions, Equations, Differential equations, Integral equations.

On the basis of experimental investigations of an aerodynamic turbulent plane-parallel wake behind a nonstreamlined body in a closed channel, ratios were obtained which allow the parameters of the fundamental region of the wake to be calculated. (Author)

Lyubimov, G. A.
THE EFFECT OF VISCOSITY AND HEAT CONDUCTION OF THE FLOW OF A GAS BEHIND A SEVERELY CURVED SHOCK WAVE. 25 Jan 62 [7]p. 1 ref. FTD-TT-61-266; AD-270 763.
Order from OTS or SLA $1.10 62-15804

Unedited rough draft trans. of Moscow U. Vestnik. Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii (USSR) 1958 [v. 13] no. 5, p. 33-35.

DESCRIPTORS: *Shock waves, *Gas flow, Fluid flow, Viscosity, *Heat transfer, Pressure, Temperature, Theory, Mathematical analysis, Mathematical prediction.

Formulas are derived for the relation of stagnation temperatures and pressures behind and in front of a shock wave of any shape.

Mkhitaryan, A. M., Maksimov, V. S. and others.
METHOD OF INVESTIGATING BOUNDARY LAYER IN A NEW TYPE WORKING SECTION. 9 Feb 62 [9]p. 5 refs. FTD-TT-61-383; AD-271 821.
Order from OTS or SLA $1.10 62-19275

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 9, p. 12-16.

DESCRIPTORS: Laminar boundary layer, *Turbulent flow, Gases, *Wind tunnels.

A turbulent boundary layer was investigated in the presence of a longitudinal pressure gradient. Distributions were obtained of velocities in free flow and in flows moving along a plate and along a pan.

Rumynskii, A. N.
BOUNDARY LAYER IN RADIATING AND ABSORBING MEDIA, tr. by Astrid Werner. July 62 [4]p. 8 refs.
Order from ARS in Its Journal, v. 32, no. 7, $3.00

Trans. of Akademiya Nauk SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1960, no. 2, p. 47-53.

DESCRIPTORS: Gases, *Boundary layer, Sheets, Laminar boundary layer, Thermal radiation, Absorption, Numerical analysis, Partial differential equations.

Rumynskii, A. N.
BOUNDARY LAYER WITH AN OPAQUE UNDERLAYER July 62 [2]p. 3 refs.
Order from ARS in Its Journal, v. 32, no. 7, $3.00

Trans. of Akademiya Nauk SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1960, no. 3, p. 141-143.

DESCRIPTORS: Gases, *Boundary layer, Optics, Thermal radiation, Absorption, Numerical analysis, Partial differential equations.

Hydrodynamics, Hydraulics, and Hydrostatics

Efros, D. A.
DETERMINATION OF RELATIVE PERMEABILITIES AND DISTRIBUTION FUNCTIONS WHEN DISPLACING OIL WITH WATER (Opredelenie Otnositel'nykh Pronitsaemostei i Funktsii Raspredeleniya pri Vytesnenii Nefti Vodoi). [1962] [11]p. (foreign text included) 6 refs.
Order from OTS or SLA $1.60 62-14577

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 110, no. 5, p. 746-749.

DESCRIPTORS: Liquids, *Oils, *Water, Fluid flow, Permeability, Statistical functions, Viscosity, Hydrodynamics, *Petroleum.

Fatkullin, A. Kh. and Lanitina, A. A.
AN EXPERIMENTAL STUDY OF THE MOVEMENT OF THE OIL—WATER CONTACT DURING WATER FLOODING. [1962] 7p.
Order from ATS $10.45 ATS-12P60R

Trans. of Neftyanoe Khoz[yaistvo] (USSR) 1961, v. 39, no. 11, p. 41-46.

DESCRIPTORS: Liquids, *Oils, *Water, *Petroleum, Fluid flow, Water injection, Hydrodynamics.

Gerts, Elena Vasil'evna and Kreinin, German Vladimirovich.
THEORY AND DESIGN OF PNEUMATIC POWER DEVICES. 28 June 62 [393]p. 127 refs. JPRS: 14313.
Order from OTS or SLA $21.00 62-25594

Trans. of mono. Teoriya i Raschet Silovykh Pnevmaticheskikh Ustroistv, Moscow, 1960, 176p.

DESCRIPTORS: *Pneumatic devices, Theory, Design, Automation, Gases, Thermodynamics, Equations, Analog computers, Digital computers, Tables, Nomographs.

Pneumatic mechanisms are analyzed by formulating and solving the equations of motion of the mechanical part, and equations which describe the thermodynamic and gas-dynamics processes in the hollow parts, and in the intake and discharge piping. These equations include experimentally obtained coefficients which take into account the difference in behavior of ideal and actual gases. Consideration is given to piston and diaphragm-type devices. Calculations were made on an MN-M analog computer and on the Strela and Ural digital computers. These results are presented in the form of graphs, tables, and nomograms for facilitating and simplifying the calculation of such devices.

Zolotykh, E. V.
EFFECT OF PRESSURES UP TO 5000 KG/CM^2 ON THE VISCOSITY OF LIQUIDS (Issledovanie Zavisimosti Vyazkosti Zhidkostei ot Davleniya do 5000 kg/cm^2). [Paper from Investigations of Physical Properties of Fluids. Apr 62 [23]p. 24 refs. RTS-1992.
Order from OTS or SLA $2.60 62-24377

Trans. of [Komitet Standartov, Mer i Izmeritel'nykh Priborov]. Trudy Institutov Komiteta (USSR) 1960, v. 46(106) p. 81-95.

DESCRIPTORS: *High pressure research, *Viscosity, Liquids, *Oils, Silicones

Glycerin, liquid paraffin, castor oil, transformer oil, normal and high-viscosity Grozny MS oils, turbine L oil, axle AU oil, and two silicones were investigated at 14^{o}m 20^{o}, and 30^{o}C. Glycerol and liquid paraffin were measured at 20^{o} and 30^{o}, one of the silicones at 14^{o}, 20^{o}, and 35^{o}. Viscosity-pressure plots at different temperatures are presented for all the liquids. The variation with pressure of the natural logarithm of the relative viscosity $\ln(\eta_p/\eta_o)$ is approximately linear in every case. Departures from linearity occur only at low pressures, and are least marked in the case of the mineral oils. Castor oil and the silicones deviate appreciably from the linear law. The effect is very marked with silicone No. 3: the function $\ln(\eta_p/\eta_o) = f_i(p)$ for this liquid is the most concave to the pressure axis, and the slope $\beta = \frac{\eta/\eta_o}{p}$ varies rapidly. The pressure coefficients β are tabulated with the exception of silicone No. 3.

METALLURGY

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNAL: METALLURGY, 1961, NOS. 10-12. 11 June 62 [5]p. JPRS: 14077.
Order from OTS or SLA $1.10 62-25190

Trans. of selected abstracts from Referativnyi Zhurnal. Metallurgiya (USSR) 1961, nos. 10-12.

DESCRIPTORS: *Metallurgy, Abstracting, China, *Liquid metals, Conductivity, *Graphite.

COMPILATION OF THE LEADING EUROPEAN PRODUCERS OF ALUMINIUM, ALUMINIUM ALLOYS, ZIRCONIUM AND ZIRCALLOY. Special rept. no. 2. Mar 61, 39p.
Order from OTS or SLA $3.60 EURAEC-32

Trans. of rept. from Société d'Etudes, de Recherches et d'Applications pour l'Industrie, Brussels (Belgium).

DESCRIPTORS: *Aluminum, *Aluminum alloys, *Zirconium, Production, Europe

DU PONT'S NON-AQUEOUS PHOSPHATING PROCESS 1961. Dec 61, 700 words.
Order from TTIS $6.00 TTIS NS-28

Trans. of Oppervlaktetechnieken van Metalen (Netherlands) 1961, v. 5, Nov, p. 190-191 [sic].

DESCRIPTORS: *Phosphates, Manufacturing methods, *Phosphate coatings, Coatings.

Bogdandy, L. von and Schäfers, W.
COMPARATIVE EVALUATION OF HYDROGEN CARRIERS INJECTED INTO THE BLAST-FURNACE HEARTH, PT. I. June 62, 7800 words.
Order from HB $15.60 HB-5466

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 1, p. 1-11.

DESCRIPTORS: *Blast furnaces, Oils, Natural gas, Coke, Steam, Hydrogen, Injection

Bogdandy, L. von and Schaefers, W.
COMPARATIVE EVALUATION OF HYDROGEN CARRIERS INJECTED INTO THE BLAST-FURNACE HEARTH, PT. II. July 62, 6500 words.
Order from HB $14.20 HB-5467

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 1, p. 11-18.

DESCRIPTORS: *Blast furnaces, Injection, *Hydrogen, Oils, Natural gas, Coke, Steam.

Boshin, R.
THE MECHANISM AND CHARACTERISTICS OF CHEMICAL AND ELECTROLYTIC POLISHING, PT. 1. [1962] 10p.
Order from ATS $16.90 ATS-69P61J

Trans. of Kinzoku (Japan) 1951, v. 21, no. 2, p. 135-138.

DESCRIPTORS: *Electrolytic polishing, Chemicals, *Metal polishes

Brunst, W. and Bauer, K.
EFFECT OF ELECTRODE SPACING ON WELDING CURRENT IN TWIN SPOT WELDING. [1962] 6p. (10 figs. refs. equations omitted).
Order from SLA $1.10 62-14344

Trans. of Schweissen und Schneiden (West Germany) 1960, v. 12, no. 10, p. 453-456.

DESCRIPTORS: Electrodes, Electric welding, *Spot welding, Sheets, Oscillographs, *Welding

Brunst, W.
SPECIAL MACHINERY AND MECHANIZATION OF WORK STAGES IN RESISTANCE WELDING. [1962] 15p. (25 figs. refs. omitted).
Order from SLA $1.60 62-14345

Trans. of Schweissen und Schneiden (West Germany) 1960, v. 12, no. 10, p. 438-446.

DESCRIPTORS: Machines, Automation, Resistance, *Welding, Welded joints, *Electrodes, Electric welding, Feed mechanisms.

Data are presented on circular transfer lines for workpieces, straight transfer lines for workpieces, workpiece feed, welding tools, ejecting the workpieces, examples of machines, and cost of special machinery.

Geguzin, Ya. E. and Pines, B. Ya.
COMPUTED AND EXPERIMENTAL EQUILIBRIUM DIAGRAMS OF THE SIMPLEST BINARY SYSTEMS [Raschetnye i Opytnye Diagrammy Ravnovesi a Prosteishikh Dvoinykh Sistem]. [1960] 6p. 5 refs.
Order from OTS $0.50 62-11364

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1950, v. 75, no. 3, p. 387-390.
Another translation is available from Fulmer Research Inst., Ltd., Stoke-Poges, Buckinghamshire, Eng. as FRI no. 14.

DESCRIPTORS: *Alloys, Phase studies

A comparison of computation with experiment is made for 20 experimental diagrams of three different kinds; (1) the "cigar" type diagram, (2) diagrams with points of equal concentration, and (3) diagrams with a eutectic point.

Geguzin, Ya. E. and Pines, B. Ya.
MIXING ENERGY OF BINARY METALLIC ALLOYS. II. BISMUTH-CADMIUM SYSTEM. [1961] 7p. 6 refs.
Order from OTS $0.50 62-11358

Trans. of Zh[urnal] Fis[icheskoi] Khim[ii] (USSR) 1951, v. 25, no. 11, p. 1300-1305.

DESCRIPTORS: *Bismuth alloys, *Cadmium alloys, Phase studies, Alloys

The mixing energy in the liquid phase was determined for the bismuth-cadmium system by means of the concentration dependence of the "configuration" heat of fusion. A computation of the curves of the additional heat capacity of the two-phase region (and also the concentration dependences of the heat of passage through the eutectic horizontal and the heat of passage through the two-phase region) showed that the passage through the two-phase region is not accomplished in equilibrium in the bismuth-cadmium system at the heating rate of ~60 $^{deg}/_{sec}$ used in our experiments. The computed equilibrium diagram constructed by using the value found for the mixing energy in the liquid phase agreed satisfactorily with the experimental diagram. (Author) (See also 62-11360)

Geguzin, Ya. E. and Pines, B. Ya.
MIXING ENERGY OF BINARY METALLIC ALLOYS. III. BISMUTH-ANTIMONY SYSTEM. [1961] 6p. 6 refs. MDF G-200.
Order from OTS $0.50 62-11362

Trans. of Zh[urnal] Fiz[icheskoi] Khim[ii] (USSR) 1952, v. 26, no. 1, p. 27-30.

DESCRIPTORS: *Antimony alloys, *Bismuth alloys, Phase studies, Alloys

A high-temperature adiabatic calorimeter was used to measure the temperature dependence of the heat capacity in the two-phase region and the heat of fusion of a bismuth-antimony (37-63% atomic) alloy. The mixing energies in the solid and liquid phases of the bismuth-antimony alloys were determined. Values of the mixing energies (U_o^I and U_o^{II}) were used to compute the liquidus and solidus curves of the equilibrium diagram. The computed and experimental liquidus lines agree; the experimental solidus line is located at lower temperatures than the computed line, which is apparently caused by the non-equilibrium of the execution of the passage through this line (the difficulty of diffusion in the solid phase). (Author) (See also 62-11358)

Geguzin, Ya. E. and Pines, B. Ya.
MIXING ENERGY OF BINARY METALLIC ALLOYS. IV. BISMUTH-TIN AND BISMUTH-LEAD SYSTEMS. [1961] 10p. 7 refs. MDF G-201.
Order from OTS $0.50 62-11361

Trans. of Zh[urnal] Fiz[icheskoi] Khim[ii] (USSR) 1952, v. 26, no. 2, p. 165-172.

DESCRIPTORS: *Bismuth alloys, *Lead alloys, *Tin alloys, Phase studies, Alloys.

Thermal measurements showed that the mixing energies in the solid and liquid phases are: (1) in the Bi-Sn system $U_o^I = 0.55 \times 10^{-13}$ erg/part, and $U_o^{II} = 2.65 \times 10^{-13}$ erg/part; and (2) in the Bi-Pb system $U_o^I = -1.1 \times 10^{-13}$ erg/part, and $U_o = +8 \times 10^{-13}$ erg/part. The 2-phase process is accomplished partially not in equilibrium in the Bi-Sn system at heating rates of about 1°C/100 sec. The values of the mixing energies in the liquid phase in both systems were compared with the results of X-ray diffraction investigations of the structure of liquid alloys of this system. There was agreement in the Bi-Sn system between the results of the thermal and the structural investigations. There was a discrepancy in the Pb-Bi System. The results of thermal measurements with Bi-Sn alloys were used to compute the equilibrium diagram. The computed diagram was similar to the experimental, but the values of the solubility limit of bismuth in tin were 81% according to computation and 90% according to the experimental diagram. See also 62-11362

Geguzin, Ya. E. and Pines, B. Ya.
MIXING ENERGY OF BINARY METALLIC SYSTEMS [Energii Smesheniya Dvoinykh Metallicheskikh Sistem]. [1960] 6p. 10 refs. MDF G-197.
Order from OTS $0.50 62-11360

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1950, v. 75, no. 4, p. 535-538.
Another translation is available from Fulmer Research Inst., Ltd., Stoke-Poges, Buckinghamshire, Eng. as FRI no. 15.

DESCRIPTORS: *Alloys, Phase studies, Specific heat

A brief explanation of the result of determining the mixing energies on the basis of measurements of the heat of fusion and the specific heat in the lamination region for five binary systems: Pb - Sn, Bi - Cd, Bi - Sb, Bi - Sn and Pb - Bi is presented. (Author)

Glazov, V. M.
VISCOSITY AND ELECTRICAL CONDUCTIVITY OF ALUMINUM–ANTIMONY, GALLIUM-ANTIMONY AND INDIUM-ANTIMONY ALLOYS IN THE LIQUID STATE [Vyazkost i Elektroprovodiost' Splavov Alyuminii-Sur'ma, Fallii -Sur'ma i Indi-Sur'ma v Zhidkom Sostoyanii]. [1962] 8p. 18 refs. MDF G-191.
Order from OTS $0.50 62-11365

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Met[allurgiya] i Topl[ivo] (USSR) 1960, no. 5, p. 190-194. Trans. in French is available from OTS or SLA $1.60 as 62-24580, CEA-tr-R1464, 26 Dec 61 [14]p.

DESCRIPTORS: *Viscosity, *Electrical conductance, *Alkali metal alloys, Aluminum alloys, Antimony alloys, Gallium alloys, Indium alloys, Liquid metals.

The temperature and concentration dependences of the viscosity and electrical conductivity of melts was studied in the Al-Sb, Ga-Sb and In-Sb systems. On the basis of an analysis of the concentration dependences of these properties, the general character of the intramolecular interaction in the systems mentioned was established for different temperatures. The deviation of the maximum viscosity in the In-Sb system toward the less viscous component was established. This phenomenon does not come within the scope of the N. S. Kurnakov classification of binary liquid systems and an explanation of it is given. The correlation between the dependences of the viscosity and the electrical conductivity of melts in all three systems investigated is also noted. (Author)

Grassmann, Peter.
COMPUTING THE TEMPERATURE DISTRIBUTION IN OXYACETYLENE CUTTING. [1962] [11]p. (4 figs. omitted) 6 refs.
Order from SLA $1.60 62-14429

Trans. of Zeitschrift für Angewandte Phyzik (West Germany) 1952, v. 4, p. 455-458.

DESCRIPTORS: Steel, *Cutting tools, *Acetylenes, *Oxygen, Combustion, Flames, Temperature, Numerical analysis

In order to calculate the temperature distribution at the oxyacetylene cutting the temperature field of a linear source of heat is computed. This source of heat moves through a heat conducting sheet, with a constant speed. By "mirror - imaging" one may also calculate temperature fields for the case, that the cutting beam is guided in a small distance from the edge of the sheet, parallel to this edge. (Author)

Hagiwara, Takeshi.
FOUNDRY COKE. [1962] 5p.
Order from ATS $8.00 ATS-54P61J

Trans. of Japanese patent 194, 648, pub. 4 Mar 52., appl. filed 28 Dec 49, pat. appl. no. 14, 037 (1949).

DESCRIPTORS: *Coke, Forging

Klotzbach, G., Jäniche, W., and Vorwerk, H.
EFFECT OF FURNACE PRACTICE IN THE PRODUCTION OF LOW-HYDROGEN STEELS AND KINETICS OF FLAKE FORMATION. July 62, 9600 words.
Order from HB $19.50 HB-5436

Trans. of Technische Mitteilungen Krupp (West Germany) 1961, v. 19, no. 3, p. 107-121.

DESCRIPTORS: *Electric furnaces, *Steel, Carbon alloys, Magnesium alloys, Hydrogen, Reaction kinetics.

Kozlov, S. F.
NEW MILLING MACHINES FOR PROCESSING ALUMINUM AND LIGHT ALLOYS. 9 Feb 62 [4]p. FTD-TT-62-4; AD-271 823.
Order from OTS or SLA $1.10 62-19647

Unedited rough draft trans. of Mashinostroitel' (USSR) 1961, no. 9, p. 35.

DESCRIPTORS: *Cutting tools, *Milling machines, Design, Configuration, Manufacturing methods, Materials, Steel castings, Carbide tools, Machining, Aluminum alloys, Industrial production, Machine tools.

If the forward edge of the cutting tool (carbide tipped tool) is of curvilinear shape, then the cutting conditions become easier to such an extent, that the rates of feeding Silumin objects during the milling of surfaces are increased by 2 to 4 times in comparison with the feeding rates, permissible for standardized cutting mills. The milling process is accompanied by a lesser amount of liberated heat, which has a favorable influence on the preservation of detail dimensions and their shape.

Moroz, L. S., Chechulin, B. B. and others.
TITANIUM AND ITS ALLOYS (TECHNICALLY PURE TITANIUM): SELECTED PARTS. 18 Sep 61 [28]p. (11 figs. 9 tables omitted) 36 refs. MCL-997; AD-265 664.
Order from OTS or SLA $2.60 62-13069

Unedited rough draft trans. of mono. Titan i Ego Splavy (Tekhnicheski Chistyi Titan, v. 1) Leningrad, 1960, p. 458-461 and 477-492.

DESCRIPTORS: *Titanium, *Welding, *Soldering, Arc welding, Welding fluxes, Welded joints, Slags, Hydrogen, Nitrogen, Oxygen, Absorption, Oxidation, Silver solders, Soldering alloys, Soldering fluxes, Metal coatings, Mechanical properties, Microstructure, *Titanium alloys.

Contents:
Automatic submerged arc welding
Soldering of Ti
  Soldering with hard solders
  Soldering with soft solders
    Chemical coating of Ti with another metal
    Coating Ti by immersion in molted Sn
    Coating Ti with Sn by the method of Ar-arc facing
  Soldering Ti to other metals

Ninomiya, K. and Sasaki, K.
CHANGE IN THE COMPOSITION OF ELECTROLYTES IN DIRECT CURRENT ELECTROLYSIS. Pt. 2 of Studies of the Mechanism of Electrolytic Polishing of Carbon Steel and Stainless Steel. [1962] 7p.
Order from ATS $12.00 ATS-66P61J

Trans. of Kogyo Kagaku Zasshi (Japan) 1955, v. 58, no. 8, p. 547-550.

DESCRIPTORS: *Electrolytic polishing, Electrolytes, *Electrolysis, Direct current, *Steel, Stainless steel

Ninomiya, K. and Sasaki, K.
CHANGE IN THE COMPOSITION OF ELECT[illegible]YTES IN ALTERNATING CURRENT ELECTROLY[illegible]
Pt. 3 of Studies of the Mechanism of Electrolytic Polishing of Carbon Steel and Stainless Steel. [1962] 5p.
Order from ATS $8.25 ATS-67P61J

Trans. of Kogyo Kagaku Zasshi (Japan) 1955, v. 58, no. 8, p. 550-551.

DESCRIPTORS: *Electrolytic polishing, Electrolytes, *Electrolysis, Alternating current, *Steel, Stainless steel

Ninomiya, K. and Sasaki, K.
EFFICIENCY OF GAS EVOLUTION. Pt. 4 of Studies of the Mechanism of Electrolytic Polishing of Carbon Steel and Stainless Steel. [1962] 6p.
Order from ATS $8.65 ATS-68P61J

Trans. of Kogyo Kagaku Zasshi (Japan) 1955, v. 58, no. 8, p. 551-554.

DESCRIPTORS: *Electrolytic polishing, Gases, *Steel, Stainless steel

Nölting, P.
POSSIBILITIES OF AUTOMATION IN CONTINUOUS CASTING. [1962] 6p. (3 figs. omitted).
Order from SLA $1.10 62-14645

Trans. of Zeits[chrift] f[ür] Erzbergbau und Metallhüttenwesen (West Germany) 1961, v. 14, no. 1, p. 32-35.

DESCRIPTORS: *Casting, *Automation, Metals, Molding, Liquid metals.

Peetz, E. and Winzer, G.
GAS FLOW THROUGH THE CHARGE IN THE UPPER PART OF THE BLAST FURNACE STACK. Aug 62.
Order from BISI £4 10s BISI-2641

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, no. 17, p. 1101-1107.

DESCRIPTORS: *Blast furnaces, *Gas flow, Velocity.

Pfister, M.
THE APPLICATION OF ELECTRONICS IN ROLLING MILLS (WITH DISCUSSION). July 62.
Order from BISI 5 15s BISI-2700

Trans. of Rev[ue de] Met[allurgie] (France) 1961 [v. 58] no. 7, p. 589-598.

DESCRIPTORS: *Rolling mills, *Control systems, Electronic equipment.

Popa, A. and Pasere, P.
ON PROLONGING THE SERVICE LIFE OF 6.7-TON INGOT MOLDS AT A RUMANIAN STEEL PLANT. July 62, 2700 words.
Order from HB $8.90 HB-5508

Trans. of Metalurgia si Constructia de Masini (Rumania) 1961, v. 13, no. 10, p. 858-862.

DESCRIPTORS: *Steel, *Castings, Molds, Statistical analysis, Rumania.

Schmidt, Theodor and Wünning, Joachim.
NEW DEVICE FOR DIRECT MEASUREMENT OF THE CARBON POTENTIAL IN FURNACE GASES. [1961] 6p. (6 figs. omitted) 3 refs.
Order from SLA $1.10 61-18699

Trans. of Stahl und Eisen (West Germany) 1960, v. 80, no. 26, p. 1952-1954.
Another trans. is available from BISI £2 5s as BISI-2162 [1961].

DESCRIPTORS: *Furnaces, *Gases, *Carbon, Measurement, Instrumentation, Metallurgy.

A device is described whereby the C-potential of furnace atmosphere can be measured directly. The electric resistance of an iron wire serves as measuring magnitude. The temperature influence on the resistance is eliminated by a standard resistance which is decarbonized to less than 0.01% of C with the help of an appropriate gas. For the purpose of the zero control, this gas is conducted even over the precision resistance for measurement purposes. With the presently used resistance of soft iron wire, the measurement can be performed only at temperatures exceeding 900 degC and an accuracy of plus minus 0.02% has been achieved. It should be expected that the device can be used even at lower temperatures under application of a wire alloyed with nickel or manganese. Besides, the measuring device is also suitable for investigation of the kinetics of the carburization and decarbonization reactions. (Author)

Shapovalov, M. A.
THE INTRODUCTION OF REDUCING GASES INTO THE HEARTH OF A BLAST FURNACE. July 58 [17]p.
BISI Trans. no. 991; NLL M.4084.
Order from OTS or SLA $1.60 62-24099

Trans. of Stal' (USSR) 1958 [v. 18] no. 5, p. 385-390.

DESCRIPTORS: *Blast furnaces, *Gases, *Reduction, Coke, Iron, Costs, Carbon compounds, Monoxides, Heat

Shevtzov, M. A. and Al'tgauzen, A. P.
CLASSIFICATION OF ELECTRONIC EQUIPMENT FOR THE HEAT TREATMENT OF METALS.
JPRS: 13459.
Order from OTS or SLA $2.60 62-23999

Trans. of #Metallovedenie i Termicheskaya Obrabotka Metallov (USSR) 1961, no. 12 [p. 2-12].

DESCRIPTORS: *Metals, *Heat treatment, *Electronic equipment, Classification, *Electric furnaces.

Silin, L. L.
THE APPLICATION OF ULTRASONICS IN WELDING AND CASTING PROCESSES. Apr 62 [62]p. 69 refs.
RTS 1715.
Order from OTS or SLA $6.60 62-24773

Trans. of mono. Primenenie Ul'trazvuka v Svarochnykh i Liteinykh Protsessakh, Moscow, 1959.

DESCRIPTORS: *Casting, *Welding, *Ultrasonics, Vibration, Elasticity, Crystallization, Metals, Alloys Mechanical properties, Microstructure.

Sokol'skaya, L. I.
GASES IN LIGHT METALS, tr. by G. F. Modlen. 1961, 1v.
Order from PP 60s

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Gases, *Metals.

Thomas, H. and Wilke-Dorfurt, U.
THE INFLUENCE OF ADDITIONS ON THE AGE-HARDENING OF COPPER-BERYLLIUM ALLOYS. [1962] [20]p. 21 refs.
Order from SLA $1.60 62-16306

Trans. of Zeit[schrift] für Metallkunde (West Germany) 1959, v. 50, no. 8, p. 466-472.

DESCRIPTORS: Aging, Hardening, *Copper alloys, *Beryllium alloys, Cobalt, Nickel, Iron, Metallurgy, Temperature, Atomic radii, Solubility, Precipitation, Alloys

The following additions were made to a copper-beryllium alloy with 2% Be, in amounts between 0.2 and 0.4%: cobalt, nickel, iron, aluminium, silicon, chromium and manganese. The age-hardening of these specimens was followed by measurements of the hardness and electrical resistivity and by microscopic examination. It was found that cobalt and nickel additions greatly retard the age-hardening rate at ageing temperatures up to 300°C. It thus becomes possible to attain higher hardnesses with greater certainty than in the addition-free binary alloy. Iron acts in the same way, but only when the specimen has been homogenized at 800°C at least. Manganese has the same effect as cobalt and nickel, at ageing temperatures below 250°C. Aluminium, silicon and chromium additions hardly affect the age-hardening rate. The influence of the additions can be understood on the basis that those which are significantly soluble and which contract the matrix lattice by reason of their atomic radii favour the formation of a tetragonal transition phase, coherent with the initial structure, so that the age-hardening proceeds largely by way of microscopically homogeneous (continuous) precipitation. The others, with larger atomic radii, facilitate the loss of coherency between the matrix lattice and the precipitate, thus increasing the tendency for γ to form directly, giving microscopically inhomogeneous (discontinuous) precipitation. (Author)

Wiegand, H., Piltz, H. H., and Schulmeister, R.
LIQUID CAVITATION AND THE SOLID CAVITATION IT INDUCES. [1962] 16p.
Order from ATS $19.75 ATS-62P61G

Trans. of Metalloberfläche (West Germany) 1962, v. 16, no. 4, p. B49-B56.

DESCRIPTORS: *Cavitation, Liquids, Solids

Yoshida, Akito.
ACTIVITIES OF IRON OXIDES IN SLAGS OF THE FeO-Fe_2O_3-CaO-SiO_2 SYSTEMS AND THE EQUILIBRIUM OXYGEN PRESSURE OF O_2 -SLAG-LIQUID IRON, tr. by K. Shimizu. 1962, 13p. 10 refs.
NRCC Technical Trans. 1030.
Order from NRCC $1.00 NRCC C-4050

Trans. of Nihon Kinzoku Gakkai-Shi (Japan) 1960, v. 24, no. 1, p. 50-54.

DESCRIPTORS: *Slags, *Iron compounds, Calcium compounds, Silicon compounds, Oxides, *Oxygen, Pressure, Chemical equilibrium, Thermodynamics, Liquid metals.

Ferrous Metals

NEW STANDARDS FOR CAST IRON. Aug 62.
Order from BISI £3 15s BISI-2778

Trans. of Gjuteriet (Sweden) 1961, v. 51, no. 5, p. 69-74.

DESCRIPTORS: *Cast iron, Iron, Standards

SOVIET INDUSTRIAL DEVELOPMENT: SELECTED TRANSLATIONS ON SOVIET FERROUS METALLURGY (52). 18 July 62 [24]p. JPRS: 14512.
Order from OTS or SLA $2.60 62-25978

Trans. from Ekonomicheskaya Gazeta (USSR) 1962, no. 19, [40] p. 36; Pravda, Moscow (USSR) 1962, 14 Apr, p. 3; 20 Apr, p. 3; Trud, Moscow (USSR) 1962, 14 Jan, p. 1; 19 Jan, p. 1.

DESCRIPTORS: *Metallurgy, Rolling mills, Metals, Foundries, Smelting, *Cast iron, *Steel castings, Machine tools, Cutting tools, Chipping hammers Machine tool industry, Blast furnaces, Natural gas, *Steel tubing, Industrial production.

Contents:
The rolled strips of "Krasnaya Etna" Plant
Centralized foundries
New methods of reducing waste in form of chips, by A. Tselikov and M. Vasil'chikov
Use of natural gas and modernization of equipment have stepped up the output of "Zaporozhstal'" considerably
New tube shop at Dnepropetrovsk Metallurgical Plant, by N. Ermolenko and others.

SOVIET INDUSTRIAL DEVELOPMENT: SELECTED TRANSLATIONS ON SOVIET FERROUS METALLURGY (53). 19 July 62 [16]p. JPRS: 14519.
Order from OTS or SLA $1.60 62-25977

Trans. of 3 articles from Ekonomicheskaya Gazeta (USSR) 1962, no. 19[40].

DESCRIPTORS: *Metallurgy, Industrial production, Sintering, Open hearth furnaces, Steel, Austenite, Manganese, Iron, Ball bearing, Metals, Alloys, Stainless steel, Industrial plants, Industrial equipment.

Contents:
Modernization should accompany the overhauling of metallurgical equipment, by F. Prikhozhan
An austenitic manganese iron used in place of non-ferrous bearings, by I. Kovalenko
The production of ferroalloys is treated as the step-child of the metallurgical industry, by V. Nakhabin.

Chelyustkin, A. B.
PROBLEMS IN THE AUTOMATION OF THE METALLURGICAL INDUSTRY, tr. ed. by H. T. Protheroe. Oct 62, approx. 110p.
Order from PP approx. $6.50

Trans. of mono. [Problemnye Voprosy Avtomatizatsii Metallurgicheskoi Promyshlennosti, Moscow, 1960, 68p.].

DESCRIPTORS: *Steel, Production, Rolling mills, Automation, Blast furnaces, Sheets.

Kawamura, M. and Sugawa, K.
ON THE PROCESS OF PELLETIZING FINE IRON ORES IN THE BALLING DRUM. July 62, 1000 words.
Order from HB $2.80 HB-5017

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 10, p. 1103-1105.

DESCRIPTORS: *Iron, *Ores, Pellets, Grains (Metallurgy).

Molinder, G.
DIAGRAMS FOR ISOTHERMAL TRANSFORMATION VALID FOR SOME SWEDISH STANDARDIZED TOOL STEELS. [1962] [27]p. 3 refs.
Order from SLA $2.60 62-14194

Trans. of Jernkontorets Tekniska Råd. Meddelander (Sweden) 1954, v. 18, no. 203, p. 263-290.

DESCRIPTORS: *Tool steel, Standards, Sweden, Transformations, Steel, Heat treatment, Carbides.

Isothermal transformation diagrams (TTT diagrams) are presented for 11 tool steels which have been standardised in Sweden. A similar diagram is derived for high-speed steel MNC 2726. The diagrams for some of the steels were derived at two or more laboratories, using different material but within the analysis limits of the standard concerned. An experiment was made to attempt to decide the composition of the matrix for those steels where not all the carbide is dissolved at the hardening temperature. The technique here was, by means of lineal analysis, to determine the quantity of carbide and, after electrolytic extraction, to determine the chemical analysis of the carbide phase.

Möller, Johannes.
SOFT NITRIDING, A PROCESS FOR IMPROVING THE ABRASION RESISTANCE OF STEEL SURFACES. [1961] 7p. (2 illus. omitted).
Order from SLA $1.10 62-14073
Original copy poor quality; available on loan also

#Trans. from Metalloberfläche (West Germany) 1955 [v. 9] no. 4.

DESCRIPTORS: *Steel, Surfaces, Abrasion, Resistance, Nitrogen, *Nitrides.

Nacken, N. and Rahmann, J.
INVESTIGATIONS ON QUENCH AGEING OF STEELS CONTAINING NITROGEN BY MEASUREMENT OF DAMPING, COERCIVE FIELD STRENGTH AND REFORMATION. Aug 62.
Order from BISI £7 BISI-2806

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 2] p. 131-140.

DESCRIPTORS: *Steel, Aging, Damping, Precipitation, Solubility, Transformations, *Nitrogen.

Reinstadler, R.
CONTRIBUTION TO THE TECHNOLOGY OF STAINLESS SINTERED STEELS. July 62, 3100 words.
Order from HB $8.50 HB-5635

Trans. of Zeitschrift [für] Metallkunde (West Germany) 1962, v. 53, no. 2, p. 86-89.

DESCRIPTORS: *Stainless steel, *Sintering, Furnaces, Atmosphere, Steel.

Rühenbeck, Adalbert.
PROPER BATH NITRIDING OF HIGH SPEED STEEL TOOLS. [1962] 11p. (4 tables 1 fig. refs. omitted).
Order from SLA $1.60 62-16571

Trans. of Metalloberfläche (West Germany) 1955, v. 9, no. 5, p. 65A-68A.

DESCRIPTORS: *Tool steel, Steel, *Cutting tools, *Hardening, Machine tools, Tools, *Nitrogen, *Nitrides, Heat of formation.

It is shown by examples how the previous difficulties with bath nitriding of high speed steel tools must be explained. Their origin lies in the false use of the nitriding bath as a quench bath and--or annealing bath. The advantage of bath nitriding is fully realized only if the tool is nitrided after it has been hardened and annealed in a neutral salt bath. It is therefore always required that a separate nitriding bath be provided. (Author)

Shtaininger, Z. and Dol' nitskii, T.
VARIATION IN THE SURFACE LAYER OF METAL UNDER THE ACTION OF SPARK MACHINING (Izmenenie Poverkhnostnovo Sloya Metalla pod Deistviem Elektroiskrovoi Obrabotki). 7 July 61 [13]p. (foreign text included) 12 refs. Trafford Park trans. no. 3017; [DSIR] NLL M. 3425.
Order from OTS or SLA $1.60 62-24837

Trans. of #Metalloved[enie] i Term[icheskaya] Obrab[otka] Metall[ov] (USSR) 1961, no. 1, p. 29-33.

DESCRIPTORS: *Steel, Surface properties, *Spark machining, Manufacturing methods, *Electrodes, Copper, Aluminum, Graphite, Tin, Nickel, Metals.

In the process of spark slotting the holes, diffusion of the electrode material was observed in the machined part, as well as "reverse" diffusion of the material from this part to the electrode instrument. Moreover, the metal which is in the form of fine suspended particles in the liquid for spark machining, diffuses through the machined metal. The amount of diffused metal from the electrode to the machined surface is, within certain limits, proportionate to the capacity used in the process of spark machining. The depth of the white layer which forms depends on the capacity applied. With an increase in the capacity, its thickness generally increases. The original structure of the steel has a great effect on the formation of the structure near the machined area. The white strip forms regardless of the type of initial structure, but its microhardness is different. With an increase in the hardness, the structure and the annealed layer are clearly pronounced on the tempered specimens. With other forms of the initial structure, these layers cannot be observed clearly (mainly when a lower current strength is used). (Author)

Stanyukovich, A. V.
EFFECT OF WORK HARDENING ON (HIGH TEMPERATURE) DEFORMATION OF 18-9 Ti STEEL 1Kh18N9T. July 62.
Order from HB $3.75 HB-5443

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 7, p. 7-14.

DESCRIPTORS: *Steel, Hardening, Deformation, Stresses.

Takamuka, M., Tsuda, S., and Tamamoto, S.
CONSTRUCTION AND OPERATION OF A 200-TON OPEN HEARTH FURNACE OF THE MAERZ-BUELENS TYPE. July 62.
Order from BISI £4 5s BISI-2864

Trans. of Radex Rund[schau] (Austria) 1962, June, p. 123-132.

DESCRIPTORS: *Steel, *Open hearth furnaces, Construction, Operation.

Ushijima, K.
EFFECT OF SOME FACTORS ON PRIMARY COOLING. Pt. 3 of Study of the Continuous Casting of Steel. Jul, 62, 1500 words.
Order from HB $4.80 HB-5019

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 3, p. 390-391.

DESCRIPTORS: *Steel, *Steel castings, Cooling, Castings, Temperature.

Zhdankovich, L. N. and Komarova, T. N.
OBTAINING FUSED GRANULATED ORES FROM KORSHUNOVKA CONCENTRATES. 19 June 62 [18]p. 6 refs. JPRS: 14166.
Order from OTS or SLA $1.60 62-25509

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 2, p. 37-42.

DESCRIPTORS: *Iron, *Ores, Fused materials, Coke, Calcium compounds.

As a result of laboratory experiments the possibility was demonstrated of obtaining stable fused particles of concentrate of Korshunovka ore. The influence of addition of lime and coke on the stability of raw and roasted granules was studied and also the influence of roasting temperature on stability of particles; an optimal roasting temperature of granules of 1200° was established. The optimal mix for obtaining stable fused particles of ore of the Korshunovka deposit is a mix of the following content: 94% concentrate of Korshunovka ore; 2% lime, and 4% coke. (Author)

Nonferrous (except light) Metals

SOVIET INDUSTRIAL DEVELOPMENT: SELECTED TRANSLATIONS ON SOVIET NONFERROUS METALLURGY (30). 17 July 62 [19]p. JPRS: 14495.
Order from OTS or SLA $1.60 62-25983

Trans. of Narodnoe Khozyaistvo Kazakhstana (USSR) 1962, no. 3, p. 62-68; and from Kazakhstanskaya Pravda (USSR) 1962, 24 Apr, p. 4; Partiinaya Zhizn' Kazakhstana (USSR) 1962 [v. 32] no. 2, p. 34-36.

DESCRIPTORS: *Metallurgy, Industrial production, Lead, Zinc, Ores, Deposits

Contents:
Progress at the Ust'-Kamenogrorsk Lead-Zinc Combine, by I. Masalov
Leaders of socialist competition at Mirgalimsai Mine, by I. Urzhenko
Rational utilization of ore deposits, by I. Malkin and V. Pivovarov

Glazov, V. N., Petrov, D. A., and Chizhevskaya, S. N.
ON THE JOINT SOLUBILITY OF ELEMENTS OF THE III AND V GROUPS IN GERMANIUM. [1960] 4p. 8 refs. MDF G-179.
Order from OTS $0.50 62-11453

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Metal[lurgiya] i Topl[ivo] 1959, no. 4, p. 153-155.

DESCRIPTORS: *Germanium alloys, Phase studies, Metals, *Anitimony alloys, Solubility.

The solubility of elements of the III group Al, Ga, In jointly with the element Sb of the V group in germanium is investigated. It is known that the elements mentioned form the compounds AlSb, GaSb, InSb with antimony, which compounds melt without decomposing and form simple eutectic mixtures with the elements. It is interesting to investigate the solubility of these elements upon their introduction in germanium in equiatomic relations corresponding to the composition of the compounds. The maximum solubility of the elements designated in germanium is insignificant and is 0.19, 0.48 0.11, 0.03 wt. percent, respectively, for aluminum, gallium, indium and antimony. (Author)

Hinnüber, J.
CEMENTED CARBIDES WITH SPECIAL CHEMICAL AND PHYSICAL PROPERTIES. [1962] 23p. 10 refs.
Order from SLA $2.60 62-14474

Trans. of Techn[ische] Mitt[eilungen] Krupp (West Germany) 1954, v. 12, no. 1 [p. 5-12].

DESCRIPTORS: *Carbides, *Chromium compounds, Bonding, Chemical properties, Physical properties, Oxidation, Resistance, *Nickel alloys, *Tungsten alloys.

Semionov, A. A. and Aleksakhin, I. A.
LINEAR SHRINKAGE OF ALLOYS IN THE ZINC CORNER OF THE Zn-Al-Cu AND Zn-Al-Mg SYSTEMS. July 62.
Order from HB $3.50 HB-4546

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1959, no. 3, p. 48-51.

DESCRIPTORS: *Alloys, *Zinc alloys, *Aluminum alloys, Copper alloys, Magnesium alloys, Deformation.

Verner, E. E. and Zinovich, N. S.
PROPERTIES OF BEARING MATERIALS BETWEEN ROOM TEMPERATURE AND 125°C. July 62.
Order from HB $3.80 HB-4548

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1959, no. 3, p. 56-59.

DESCRIPTORS: *Bearings, *Tin alloys, *Lead alloys, Antimony, Copper, Stresses.

Zasimuchk, E. E., Kurdyumov, G. V., and Larikov, L. N.
EFFECT OF ALUMINUM AND TITANIUM ON THE LINEAR GROWTH RATE OF RECRYSTALLIZATION NUCLEII IN DEFORMED NICKEL AND NICHROME. 1962, 3p. 13 refs.
Order from STS $4.90 STS-Z6222

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk. Izvestiya: Metallurgiya i Toplivo] 1962, no. 3, p. 85-87.

DESCRIPTORS: *Metallic crystals, *Crystallization, Nuclei, Aluminum, Titanium, *Nickel, Chromium alloys, *Solid state physics.

Structural Metallurgy and Corrosion

Bianchi, G. and Gandolfi, U.
RESEARCH ON CORROSION TESTS IN SALINE FOR. III. ON THE EFFECT OF THE SHAPE OF THE SAMPLES. [1962] 10p.
Order from K-H $12.50 K-H 5256

Trans. of [la] Metallurgia Italiana, 1955, v. 47, p. 551-554.

DESCRIPTORS: *Salinity, *Corrosion.

Gol'denberg, A. A.
EFFECT OF TRANSFORMATIONS ON STRESS RELAXATION DURING THE TEMPERING OF STEEL 30KhGSNA AND AGING OF ALUMINUM ALLOY B95. July 62, 2300 words.
Order from HB $5.90 HB-4389

Trans. of Metallovedenie i [Termicheskaya] Obrabotka Metallov (USSR) 1958, no. 10, p. 11-17.

DESCRIPTORS: *Steel, *Aluminum alloys, Thermal stresses, Transformations, Heat treatment, Aging.

Golik, V. R., Sirenko, G. A., and Khotkevich, V. I.
X-RAY DIFFRACTION STUDY OF THE DISTORTION OF THE CRYSTAL LATTICE OF METALS DEFORMED AT LOW TEMPERATURES. [1960] 6p. 15 refs. MDF G 174.
Order from OTS $0.50 62-11534

Trans. of #Fiz[ika] Met[allov] i Metall[ovedenie] (USSR) 1959, v. 8, no. 2, p. 235-239.

DESCRIPTORS: *Metals, Deformation, *Crystal structure, X-ray diffraction analysis, Iron, Aluminum, Lead

Microdeformations and the magnitude of coherent scattering regions in Fe, Al and Pb deformed at room temperature and at 77°K are investigated by the method of harmonic analysis. It is shown that the most intense deviation of the microdeformation and breaking up of the coherent scattering regions occur at the very beginning of the deformation. A drop in the deformation temperature leads to a further increase in the microdeformations and a decrease in the coherent scattering regions. The microstresses which arise are compared with the fluidity limit determined at the appropriate temperatures. An estimate is given of the elastic energy of the residual microdistortions. (Author)

Hochmann, J.
KNIFE EDGE CORROSION OF WELDING JOINTS IN CERTAIN STAINLESS STEELS. July 62.
Order from BISI £2 5s BISI-2773

Trans. of mono. Colloquium on Metallurgy, Corrosion of Steel (no. 3) [1959. Proceedings] p. 171-174.

DESCRIPTORS: *Stainless steel, *Welded joints, *Corrosion.

Kharitonova, L. D.
EFFECT OF ALLOYING ELEMENTS ON THE STRENGTH OF THE GRAIN BOUNDARIES IN ALUMINUM ALLOYS AT HIGH TEMPERATURES. July 62.
Order from HB $3.40 HB-4547

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1959, no. 3, p. 51-55.
Another trans. is available from OTS or SLA $1.60 as 62-15710, FRI Trans-162, 28 July 61 [11]p.

DESCRIPTORS: *Aluminum alloys, Grains (Metallurgy), Mechanical properties, *Copper alloys, Microanalysis, Diffusion, Heat resistant alloys.

Kozyrskii, G. Y.
FAILURE OF METALS DURING CREEP (K Voprosuo Razrushenii Metallov pri Polzuchesti). Aug 61 [10]p. (foreign text included) 10 refs. NLL M. 3512.
Order from OTS or SLA $1.10 62-24909

Trans. of Issled[ovaniya] po Zharoproch[nym] Splavam (USSR) 1960, v. 6, p. 25-28.

DESCRIPTORS: *Metals, *Failure (Mechanics) *Creep, Stresses, Grains (Metallurgy)

Soloveichik, I. E.
EMBRITTLEMENT OF STEEL IN NITRIDING FOR RUSTPROOFING. July 62.
Order from HB $2.00 HB-5453

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 7, p. 52-54.

DESCRIPTORS: *Steel, *Hydrogen embrittlement, *Nitrides, Heat treatment, Corrosion inhibition

Solov'ev, N. A.
METALLIC COATINGS TO INCREASE THE HEAT RESISTANCE OF PARTS. July 62.
Order from HB $2.00 HB-5455

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 7, p. 58-61.

DESCRIPTORS: *Electroplating, *Metal coatings, Copper coatings, Tin coatings, Zinc coatings, Cadmium plating, Chromium plating, Nickel plating, Aluminum, Titanium alloys, Corrosion inhibition.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

ACCELERATORS: COLLECTION OF ARTICLES. 27 Apr 62 [188]p. 48 refs. FTD-TT-61-242; AD-275 737.
Order from OTS or SLA $13.00 62-25413

Unedited rough draft trans. of mono. Uskoriteli: Sbornik Statei, Moscow, 1960, 163p.

DESCRIPTORS: *Particle accelerators, Electron accelerators, Particle beams, *Accelerators, Particles, *Electromagnetic fields, *Linear accelerators, Oscillation, *Particle trajectories, Focusing, *Magnetic fields, *Electromagnetic lenses, Electron capture, *Betatrons, *Synchrotrons, Electrons, *Phase meters, Circuits, *Waveguide couplers, Absorption, *Mass spectrometers, *Ion sources, Scattering.

Contents:
Motion of a particle in an electromagnetic field, by S. P. Lomnev
Radical oscillations of particles in a linear electron accelerator, by S. Lomnev and G. A. Tyagunov
Trajectory of particles in a linear electron accelerator, by S. P. Lomnev and G. A. Tyagunov
Focusing particles by means of a periodic magnetic field in a linear electron accelerator, by S. P. Lomnev and G. A. Tyagunov
Focusing a beam of particles in a linear electron accelerator by means of electromagnetic lenses, by S. P. Lomnev and G. A. Tyagunov
Calculation for particle dynamics in a linear electron accelerator where the focusing magnetic field is found graphically, by S. P. Lomnev
Proportion of power carried by accelerating harmonic in a linear electron accelerator, by S. P. Lomnev
Investigation of electron acceleration capture in betatrons and synchrotrons, by P. A. Ryazin
Investigation of radical oscillations of electrons in a betatron during injection, taking into account their interaction, by A. I. Zaboev
An examination of the accuracy of a solution to the equation of motion of a particle in a betatron, by S. P. Lomnev
Comparison of phasometer circuits, by N. P. Sobenin
A new method for coupling a phasometer circuit to a diaphragm-type waveguide, by N. P. Sobenin

An absorbing load for a diaphragm-type waveguide, by N. P. Sobenin and R. K. Gavrilova
Mass-spectrometer installation for investigating ion sources, by A. I. Nastyukha and others
An investigation of the motion of electrons in the magnetic system of an elutron, taking into account scattering fields, by V. V. Kusnetskii and others.

NUCLEAR APPLICATION OF TRANSIENT ELECTROANALYTICAL METHODS, tr. by Claude Carty.
Quarterly rept. no. 1 on Contract (018-60-7RDB).
2 Dec 60, 10p. Supersedes TID-12469.
Order from OTS or SLA $1.10 EURAEC-109

Trans. of rept. from Brussels U. (Belgium).

DESCRIPTORS: *Radiochemistry, Electrolysis, Instrumentation, *Radiation counters, Chronographs.

Transient system methods of electrolysis are to be developed and improved. For the cathode ray oscillograph an electronic assemply is to be substituted that is based on the use of triggers connected with electronic chronometers which apply the principle of impulse counters. It is announced that model equipment was designed and constructed for various electroanalytical applications in the field of nuclear chemistry.

Barbieri, F.
VISIT TO THE NUCLEAR RESEARCH CENTER IN DUBNA. 20 June 62 [9]p. JPRS: 14177.
Order from OTS or SLA $1.10 62-25510

Trans. of Vjesnik (Yugoslavia) 1962, v. 23, no. 5468, p. 4.

DESCRIPTORS: Scientific research, *Nuclear physics laboratories, Atomic energy engineering

Gaudin, Michel.
A SIMPLIFIED PROOF OF WICK'S THEOREM IN STATISTICAL MECHANICS [Une Démonstration Simplifiée du Théorème de Wick en Mécanique Statistique] tr. by S. G. Brush. [1962] [4]p. 3 refs.
Order from OTS or SLA $1.10 UCRL Trans-563(L)

Trans. of Nuclear Physics (Netherlands) 1960, v. 15 [no. 1] p. 89-91.

DESCRIPTORS: *Quantum statistics, Quantum mechanics, *Particles, Annihilation reactions, Theory.

Grebenshchikova, B. I. and Davidov, Yu. P.
RESEARCH ON THE STATE OF Pu(IV) IN DILUTE SOLUTIONS OF NITRIC ACID. [1961] 14p. 15 refs.
Order from OTS or SLA $1.60 AEC-tr-4830

Preliminary unedited trans. of Radiokhimya (USSR) 1961 v. 3, p. 155-164.

DESCRIPTORS: Transuranic elements, *Plutonium, Nitric acid, Acids, Solutions, Adsorption, Glass, Adsorbents, Hydrogen ion concentration, Colloids, Centrifuge separation, Migration length, Electric fields.

As a result of the simultaneous use of a series of methods (adsorption on glass, ultrafiltration, centrifugation, and migration in an electric field) it was shown that Pu(IV), in 6.8×10^{-8} M concentration is in ionic form at pH 2.8 to 7.5, and in true colloidal form at pH 7.5 to 12.0. (Author)

Mikami, Hisashi and Oyama, Yoshitoshi.
SEPARATION OF ISOTOPE MIXTURE BY NOZZLE PROCESS. July 62, 9p. (refs. omitted).
Order from OTS $0.50 AEC-tr-5069

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2 [no. 5] p. 291-295.

DESCRIPTORS: *Isotope separation, Mixtures, Nozzles, Gases, Gas diffusion

Calculation of the separation effect is made in the case where it is regarded as a free molecular flow with $K_n \gg 10^{-1}$.

Elementary Particles

Alikhanov, A. I.
STRONG INTERACTIONS: NEW DEVELOPMENTS IN ELEMENTRARY PARTICLE RESEARCH. 3 July 62 [11]p. JPRS: 14370.
Order from OTS or SLA $1.60 62-25623

Trans. from Pravda [Moscow] (USSR) 1962, 25 May, p. 4.

DESCRIPTORS: *Particles, Particle accelerators, *Mass energy relation.

Gol'dman, I. I.
IONIZATION LOSSES AND THE CAPTURE OF SLOW, HEAVY NEGATIVE PARTICLES. 29 Jan 62 [11]p. 2 refs. FTD-TT-61-350; AD-271 866.
Order from OTS or SLA $1.60 62-19276

Unedited rough draft trans. of Akademiya Nauk Armyanskoi SSR [Erevan]. Izvestiya. Seriya Fiziko-Matematicheskikh Nauk, 1961, v. 14, no. 1, p. 79-86.

DESCRIPTORS: *Ionization, *Particles, Energy, *Electron capture, Electron transitions, Fourier analysis, Probability, Integration.

An analysis of the case when deceleration takes place in a gas shows that if $E \leqslant Z^{4/3}$ 6.15 ev, the particle cannot come close to the nucleus and the probability of capture will be low.

Nuclear Engineering and Power

REPROCESSING OF SPENT FUELS. Progress rept. no. 3, 4th. Quarter 1960, on Contract [(008-60-4-RDB)]. 1960, 100p. 23 refs.
Order from OTS or SLA $8.60 EURAEC-81

Trans. of rept. from Centre d'Etude de l'Energie Nucléaire (Belgium).

DESCRIPTORS: *Fuel processing, *Chlorination, *Oxidation-reduction reactions, Reaction kinetics, Elimination reactions, *Fission products, *Powder metallurgy, Uranium compounds, Fluorides, Oxides, Fluidized solids, Fluorination, Fractionation, Gas chromatography, Plutonium, Fission product activity, *Reactors fuels, Decontamination

Contents:
Chlorination, by P. Speeckaert
Kinetics, by A. Francesconi
Elimination of fission products, by J. Broothaerts
Powder technology, by R. Heremans
Technology of uranium hexa-fluoride, by G. Pierini
Plutonium, by G. Camozzo

Courtois, Guy and Le Clerc, Pierre.
IMPROVEMENTS IN RADIOACTIVE SOURCES. [1962] 14p.
Order from OTS or SLA $1.60 62-14890

Trans. of Belgian patent 600665, by Commissariat a l'Energie Atomique (France) 27 Feb 61, priority: France, pat. appl. filed 17 Mar 60 under PV 821,656.

DESCRIPTORS: *Radioactivity, *Sources, Radioactive isotopes, Labeled substances, *Ceramic materials.

The radioactive source, particularly designed for use under high mechanical stresses, at high temperatures and/or in corrosive atmospheres, is characterized by the fact that it has a radioactive source coated with or incorporated in a special ceramic mass, generally known by the name "pyrocerame", which is made up of a composition which is similar to a titanium glass, but under a crystallized form. (Author)

Smirnov-Averin, A. P., Galkov, V. I. and others.
INVESTIGATING AN EXHAUSTED HEAT-PRODUCING ELEMENT OF THE FIRST ATOMIC ELECTRIC POWER STATION. 28 Feb 62 [9]p. 2 refs. FTD-TT-62-137.
Order from OTS or SLA $1.10 62-24933

Unedited rough draft trans. of #Atomnaya Energiya (USSR) 1961, v. 11, no. 2, p. 122-125.

DESCRIPTORS: *Nuclear power plants, Power plants, *Electric power production, *Heating elements, *Transuranic elements, Alpha particles, Beta particles, Gamma rays, Measurement, Plutonium, Cesium, Radioactive isotopes, Mass spectroscopy.

Data are presented on the study of a heat-producing element (TVEL) of the first atomic electric power station, which functioned in a reactor for 445 effective diurnal periods (24-hr periods). Diameter measurements point toward the presence of saturation in the process of TVEL swelling at greater burnups. The content of transuranium elements in TVEL is equal (in kilograms per 1 ton of uranium): Pu^{239} - 4.10; Pu^{240} - 1.53; Pu^{241} - 0.64; Pu^{242} - 0.20; Cm^{242} - 2.73×10^{-3}. (Author)

Suwalski, Witold and Weiss, Zbigniew.
OPTIMUM OPERATING CONDITIONS OF A PILE OSCILLATOR (Metoda Wyznaczania Optymalnych Parametrow Pracy Oscylatora Reaktorowego). 11 Sep 61 [22]p. JPRS: 10111.
Order from OTS or SLA $2.60 62-19628

Trans. of Nukleonika (Poland) 1961, v. 6, no. 1, p. 1-15.

DESCRIPTORS: Graphite moderated reactors, Heavy water reactors, *Reactor moderators, *Oscillators, Operation, *Neutron flux density.

Tarasenko, N. Yu., Prostakova, I. G., and Rynkova, N. N.
PREVENTION MEASURES FOR RADIATION SAFETY. 13 July 62 [37]p. JPRS: 14449.
Order from OTS or SLA $3.60 62-32007

Trans. of mono. [Gigiena Truda pri Rabote na Atomnykh Elektrostantsiyakh] (Work Hygiene in Working in Atomic Electrical Stations) Moscow, 1960, p. 58-103.

DESCRIPTORS: *Safety, *Atomic energy engineering, *Nuclear power plants, Protective clothing, *Radiation injuries.

Measures for radiation safety in atomic electrical stations are discussed.

Valkov, V. I. and Maslenkova, G. L.
SPECTRES RAMAN DU H_2O ET DU D_2O A DIVERSES TEMPERATURES (Spektr Kombinatsionnogo Rasseyaniya Bol'shikh Chastot D_2O pri Razlichnykh Temperaturakh) tr. by Mme. Roth. 3 Oct 61 [13]p. 10 refs. CEA Trans. no. R 1408.
Order from OTS or SLA $1.60 62-13822

Trans. in French of [Akademiya Nauk SSSR. Vestnik] 1957, v. 27, no. 8, p. 8-13.

DESCRIPTORS: *Raman spectroscopy, *Heavy water, *Deuterium oxide, Vapors, Solids, Molecules, Vibration, Thermochemistry.

Veksler, V.
ACCELERATORS OF ATOMIC PARTICLES. 26 June 62 [15]p. JPRS: 14273.
Order from OTS or SLA $1.60 62-25520

Trans. from Pravda, Moscow (USSR) 1962, 31 Mar, p. 4.

DESCRIPTORS: *Particles, *Accelerators, *Particle accelerators, Atomic energy, Nuclear physics, Cyclotrons, Synchrocyclotrons.

Werner, H. and Rier, H.
PHYSICAL VIEWPOINTS IN THE DESIGN OF A RESEARCH REACTOR WITH SLIGHTLY ENRICHED URANIUM (1.5% U^{235}) AS FUEL AND HEAVY WATER AS MODERATOR AND COOLANT (Physikalische Gesichtspunkte beim Entwurf eines Forschungsreaktors mit Leicht Angereichertem Uran (1.5% U^{235}) als Brennstoff und Schwerem Wasser als Moderator und Kuhlmittel). Suppl. to rept. 9 on Physical Viewpoints in Designing a Research Reactor with Natural Uranium as Fuel and Heavy Water as Moderator and Coolant. [1960] [15]p. (graphs figs. tables omitted).
Order from SLA $1.60 60-18507

Trans. of Kernreaktor, Sept. 6, 1957, 57/21 Report no. 11, Karlsruhe, p. 1-130 [sic].

DESCRIPTORS: *Research reactors, Design, Uranium, Fuel elements, Fuel rods, Heavy water, Reactor moderators, Reactor coolants

Nuclear Reactions

Hokkyo, Noboru and Kitazume, Mitsuyuki.
TWO-GROUP CALCULATION OF CAPTURE GAMMA-RAYS FROM INFINITE SLAB. July 62, 6p. 3 refs.
Order from OTS $0.50 AEC-tr-5077

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2 [no. 8] p. 474-477.

DESCRIPTORS: *Reactor shielding calculations, Gamma rays, *Gamma-neutron reactions, *Fast neutrons, *Thermal neutrons, Neutron flux density, *Fuel plates, Shielding, *Non-leakage probability.

This report deals with the case in which the fast and thermal neutron currents incident on a face of infinite slab are given, and gives the general formulae with which to calculate the capture gamma currents and fluxes leaking from the said face and the rear face. The result with regard to the capture gamma currents is an extension of the well-known formulae of Iliffe to two-group approximation for the thermal neutron. (Author)

Teofilovski, Cedomir.
PRODUCTION OF ARTIFICIAL RADIOISOTOPES IN YUGOSLAVIA. 19 July 62 [17]p. JPRS: 14524.
Order from OTS or SLA $1.60 62-25971

Trans. of Tehnika (Yugoslavia) 1962, v. 17, no. 5, p. 837-842.

DESCRIPTORS: Production, *Radioactive isotopes *Yugoslavia, Reactor fuels, Nuclear power plants, *Artificial radioactivity

The report provides a survey of the more important problems that arise in the production of artificial radioisotopes obtained through the irradiation of material in a reactor of through the treatment of nuclear fuel. The report also includes the program for producing artificial radioisotopes in the "Boris Kidric" Institute in Vinca. (Author)

PERSONNEL SUPPLIES AND PERSONAL EQUIPMENT

Maret, Charles.
IMPROVEMENT IN HEELS FOR LADIES' SHOES, tr. by P. C. C. 10 July 62, 5p. (9 figs. omitted).
Order from OTS or SL $1.10 62-32228

Trans. of French patent 1,183,854, gr. 16, cl. 4, internat. cl. A43b, appl. 3 Oct 57, granted 2 Feb 59, pub. 15 July 59.

DESCRIPTORS: *Shoes, *Women, Clothing.

PHYSICS

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNAL: PHYSICS, 1961, NO. 4. 19 June 62 [21]p. JPRS: 14189.
Order from OTS or SLA $2.60 62-25511

Trans. of selected abstracts from Referativnyi Zhurnal. Fizika (USSR) 1961, no. 4.

DESCRIPTORS: *Physics, Abstracting, Particles, *Nuclear physics, Optics, Radio, Electronics, Acoustics, Solid state physics.

Branover, H. and Lielausis, O.
THE EFFECT OF A TRANSVERSE MAGNETIC FIELD ON INTERNAL STRUCTURE AND HYDRAULIC RESISTANCE IN TURBULENT FLOWS OF LIQUID METALS. 29 Jan 62 [13]p. 10 refs.
FTD-TT-61-281; AD-271 852.
Order from OTS or SLA $1.60 62-19650

Unedited rough draft trans. of Akademiya Nauk Latviiskoi SSR [Riga]. Izvestiya, 1961, no. 1 [162] p. 59-66.

DESCRIPTORS: *Magnetohydrodynamics, *Liquid metals, Electrical properties, *Resistance.

Experiments were performed for the study of the turbulent flow of mercury in a transverse magnetic field. The effect of the magnetic field upon the resistance, upon the rate distribution in various cases, and also upon mass transfer, which is directly connected with the structure of turbulence, was determined.

Fain, V. M.
QUANTUM PHENOMENA IN THE RADIO FREQUENCY RANGE. [1962] 65p. 77 refs.
Order from OTS or SLA $6.60 62-14846

Trans. of Usp[ekhi] Fiz[icheskikh] Nauk (USSR) 1958, v. 64, no. 2, p. 273-313.

DESCRIPTORS: *Quantum mechanics, *Radiofrequency, *Microwave spectroscopy, *Molecular spectroscopy, Electrons, Motion, Electromagnetic fields, Electromagnetic waves, Electronics, Radio waves, Molecules.

Consideration is given to the question of quantum effects when free electrons interact with high frequency fields. Essentially, quantum effects in this case are negligible. However in principle it is possible to measure certain of these effects. Also certain quantum effects, generally speaking, are not negligible. For example, quantum dispersion of the energy of the field may not be small. A series of questions of radiospectroscopy is considered, basically connected with the possibility of creating coherent states in a system of molecules. The natural line width in the radio frequency range is, generally, not small. The question of radiation of molecules (spontaneous and forced in the presence of an external high frequency field) is also considered. (Author)

Gintsburg, M. A.
SURFACE WAVES ON THE BOUNDARY OF A PLASMA IN A MAGNETIC FIELD. July 61 [15]p. 5 refs, MDF G-207; AFCRL 534; AD-262 521.
Order from OTS $0.50 62-11366

Trans. of N[auchno]-I[ssledovatel'skii I[nstitut] Z[emnogo] M[agnetizma, Ionosf[ery] i Rasprost]-raneniya] Radiovoln. Trudy (USSR) 1960, v. 17(27) p. 208-215.

DESCRIPTORS: *Plasma physics, Surface properties, *Magnetic fields, *Ionospheric propagation, Tensor analysis, Wave transmission, Ferrites, *Radio waves, Propagation, Ferromagnetic materials, Magnetohydrodynamics, Terrestrial magnetism, Ionosphere, Electronic switches, Ionosphere models, Mathematical analysis, Differential equations.

Surface waves in a gyrotropic medium on the boundaries of a plasma in a magnetic field are analyzed. There is here kept in mind that the phenomena considered play a certain part in radiowave propagation in the ionosphere. (Author)

Gorokhov, Yu. V.
OBSERVATION OF GYROMAGNETIC RESONANCE OF ELECTRONS IN A DISINTEGRATING PLASMA. [1961] 4p. (1 fig. omitted) 1 ref. MDF G-142.
Order from OTS or SLA $0.50 62-11444

Trans. of Radiotekh[nika] i Elektr[onika] (USSR) 1956, v. 1, no. 6, p. 794-797.

DESCRIPTORS: *Plasma physics, Paramagnetic resonance, Electrons, *Microwave equipment, Antennas, *Switches, Klystrons, Resonance.

A measurement was made of the complex dielectric permeability of a disintegrating gas-discharge plasma in an antenna switch for a direct magnetic field applied to the discharge. The measurement results are compared with theory. Gyromagnetic resonance of the electrons was observed in hydrogen and helium for gas pressures from 3×10^{-3} - 4 mm Hg. (Author)

Isakovich, M. A.
SOUND PROPAGATION IN MIXTURES OF FLUIDS. [1962] [9]p. 2 refs. [DSIR] NLL M. 3428.
Order from OTS or SLA $1.10 62-24840

Trans. of Zh[urnal] Eksp[erimental'noi] i Teor[eticheskoi] Fiz[iki] (USSR) 1948, v. 18, no. 10, p. 907-912.

DESCRIPTORS: *Fluids, Mixtures, Benzenes, Water, *Sound, *Propagation, Velocity, Attenuation.

Savin, G. N.
STRESS CONCENTRATION AROUND HOLES, tr. by E. Gros. 1961, 1v.
Order from PP $15.00

Trans. of unidentified Russian mono., n.p., n.d.

DESCRIPTORS: *Stresses, Distribution.

Wienecke, R.
ON THE APPEARANCE OF JETS IN CARBON ARCS OF A HIGH CURRENT INTENSITY, PT. I. [1959] 18p. 4 refs.
Order from OTS or SLA $1.60 AEC-tr-3737

Trans. of Z[eitschrift] für Physik (West Germany) 1958 v. 150, p. 231-241.

DESCRIPTORS: Light, Sources, *Carbon, *Electric arcs, Electric currents, Intensity, Vapors, *Jets, Sublimation, Cathodes, Materials, Spectrographic analysis

The well-known fact that a new contrast in the form of a brightly glowing filament is formed within the normal arc core in an arc light with high current intensities is attributed to the formation of vapor jets of the cathode material. The number of jets starting from the cathode in a "brush-like" form increases linearly with the current intensity above 500 amps. The velocity within the individual "filaments" must be considerable, since they offer a great resistance to deflection by an external magnetic field and since thin water jets shot through the arc perpendicular to its axis are subject to a deflection in direction. (Author) (See also 59-17588)

Electricity and Magnetism

Gruber, Josef and Wintersberger, Karl.
METHOD FOR THE PRODUCTION OF γ IRON (III) OXIDE, IN THE FORM OF NEEDLES, ESPECIALLY SUITABLE FOR MAGNETIC RECORDING MEDIA. [1962] 7p.
Order from OTS or SLA $1.10 62-14892

Trans. of French patent 1,266,663, by Badische Anilin- & Soda-Fabrik A. G. (West Germany) filed 22 Aug 60, granted 5 June 61 (German priority 21 Aug 59).

DESCRIPTORS: *Magnetic recording systems, Ferromagnetic materials, Materials, *Iron compounds, *Oxides, Production, Magnetic properties, Hydroxides, Precipitation.

Iron (III) hydroxide is precipitated from an iron (III) salt solution which has been introduced into an alkaline solution in great excess with regard to the necessary

stoichiometric quantity, while stirring vigorously, at temperatures between about 10 and 50°C, and preferably between 25 and 35°C. The precipitated iron (III) hydroxide is treated for several hours with a strongly alkaline solution at temperatures between about 20 and 90°C. It is heated then at a higher temperature, preferably at one close to the boiling point of the alkaline solution, if necessary under pressure. It is separated by filtration, washed, dried and converted, with the help of reducing gases, into an oxide of iron-II-iron-III, and then the latter is oxidized, with the help of oxygenated gases, and γ-iron (III) oxide is obtained. (Author)

Pauthenet, R.
FERRITES AND SOFT MAGNETIC ALLOYS. [1962] 17p. (12 figs. bibliography omitted).
Order from SLA $1.60 62-14653

Trans. of Revue Générale de l'Électricité (France) 1960 [v. 69, no. 11] p. 601-611.

DESCRIPTORS: *Ferrites, *Ferromagnetic materials, Alloys, Magnetic materials, Electrical industry, Semiconductors, *Magnetic alloys

A survey.

Sarychev, V. M.
THE MOTION OF A PLASMA FLOW IN A TUBE IN THE PRESENCE OF EXTERNAL ELECTRICAL AND MAGNETIC FIELDS. 18 Jan 62 [13]p. 5 refs. FTD-TT-62-43; SC-978; ASTAR-2586; AD-271 857.
Order from OTS or SLA $1.60 62-19279

Unedited rough draft trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1961, no. 1, p. 3-9.

DESCRIPTORS: *Plasma physics, *Magnetohydrodynamics, *Continuum mechanics, Equations, Motion, Magnetic fields, Electric fields

The problem of the motion of a flow of partially ionized gas in a tube in the presence of external constant intersecting electrical and magnetic fields under certain assumptions is considered by the method of the elementary theory of plasma. The drift velocity and the temperature of the charged particles, the density of the current, the electrical and magnetic fields in the plasma, the forces acting on the charged particles, and the energy dissipated by the charged particles are found. The conditions for a maximum volume force acting on the plasma and a maximum specific power fed to the plasma are determined. The conditions of applicability of the one-dimensonal theory are established. (ASTIA abstract)

Electronics

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, RADIOPHYSICS SERIES, 1961, VOL. 4, NO. 6. 29 May 62 [391]p. JPRS: 13916.
Order from OTS or SLA $21.00 62-24967

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1961, v. 4, no. 6, p. 989-1180.

DESCRIPTORS: *Radio, Electronics, *Radio astronomy, *Extraterrestrial radio waves, *Radio fields, *Moon, *Ionosphere, Scattering, Stability, Radio waves, *Gas ionization, Kenetic theory, *Plasma physics, Excitation, *Lens antennas, *Telescope lenses, Radiation effects, *Generators, Oscillation, *Filaments, Impedence, Modulation, *Waveguides, *Electromagnetic waves, Dielectric properties, *Magnetrons, Particle trajectories. Electrodes, *Transistors, Circuits, *Vibrators, Integrals, *Magnetism, Atmospherics.

Contents:
Results of observation of the discrete source Cygnus-A at large zenith angles, by V. V. Belikovich and others
Development of a method for precision measurements of the intensity of the field and standardization of radio emission from the moon on $\lambda = 3.2$ cm, by V. D. Krotikov and others
Results of experimental investigation of the effect of "double splitting" in the F layer of the ionosphere, by D. K. Vodeneeva and N. A. Mityakov
Estimate of stability of reflection of radiowaves from the sporadic E layer, by S. S. Chavdarov and Yu. K. Chasovitin
Set characteristics of atmospheric noise in the band from 2 to 25 cps, by S. M. Gorskii and V. A. Krotov
Relativistic kinetic equation for rapidly varying processes in ionized gas, by V. P. Silin
Concerning one case of excitation of waves in a non-equilibrium magneto-active plasma, by M. S. Kovner,
Effect of receiver on fluctuations of the received radiation, by N. G. Denisov
Certain methods and results of measuring fluctuations of amplitude and frequency of generator oscillations, by A. N. Malakhov and others
Radiation from sources located over a plane with sinusoidally modulated surface impedance, by V. I. Talanov
Investigation of properties of cylindrical plasma waveguide, by S. M. Levitskii and N. S. Baranchuk
Electromagnetic waves in cross-shaped waveguide made up of sectors, by N. I. Kuz'min and T. V. Makarov
Measurement of dielectric constant of small specimens in the microwave range, by S. A. Peskovatskii and T. G. Sheina
Experimental measurement of the trajectories of electrons in a cylindrical unslotted magnetron in the static mode, by M. I. Kuznetsov and L. M. Groshkov
High frequency power and electronic efficiency of a generator tube with two retarding electrodes, by A. M. Maksimova
Concerning one problem in the theory of self-oscillations, by I. E. Sredniy and E. P. Maslov
Concerning the stability of transistor circuits, by N. I. Ashbel' and L. V. Postnikov
Dynamics of a junction-transistor multivibrator, by V. G. Aranovich and L. V. Postnikov
Fresnel formulas on a moving interface between two media, by B. M. Bolotovskii and S. N. Stolyarov
Geomagnetism and Aeronomy, 1961, v. 1, nos. 3-4, abstracts of articles

Schütte, H. G.
EFFECT OF FLOW PHENOMENA ON ARC MIGRATION IN NARROW GAPS. June 62.
Order from BISI $2.5 BISI-2744

Trans. of [ETZ] Elektrotechnische Zeitschrift. [Ausgabe A. Zentralblatt für Elektrotechnik] (West Germany) 1962, v. 83 [no. 1] p. 16-23.

DESCRIPTORS: *Electric arcs, *Electrons, Motion, Electrical effects, Schlieren photography, Pressure, Measurement.

Molecular Physics and Spectroscopy

Biltz, H., Genzel', L., and Happ, H.
ON THE INFRARED DISPERSION OF ALKALI HALIDES. I. INTERPRETATION OF THE SPECTRA ACCORDING TO THE THEORY OF BORN AND HUANG. [1962] 28p. 35 refs.
Order from SLA $2.60 62-14150

Trans. of Zeitschrift für Phyzik (West Germany) 1960, v. 160, p. 535-553.

DESCRIPTORS: *Alkali metals, Lithium, Sodium, Cesium, *Halides, *Crystal structure, *Infrared spectroscopy, Quantum mechanics.

The infrared spectra of LiF, Na Cl and Cs Br are interpreted according to the dispersion theory of Born and Huang. This theory takes account of anharmonic terms in the lattice potential and leads to a frequency-dependent damping which describes the absorption. This damping function is obtained by evaluating the empirical data of the optical constants and comparing it with an approximate computation based on the frequency spectrum of lattice vibrations. The result of this comparison shows that theory and experiment are in good agreement qualitatively, especially with respect to the secondary structure in dispersion. (Author)

Dekabrun, L. L. and Lyubimova, A. K.
AUTOMATIC MAGNETIC SWEEP SYSTEM OF MASS-SPECTRA [Sistema Avtomatomaticheskoi Magnitnoi Razvertki Mass-Spektrov]. [1961] 6p. 4 refs. MDF D 108.
Order from OTS $0.50 62-11207

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 13, p. 2282-2285.

DESCRIPTORS: Spectrographic analysis, *Mass spectroscopy, *Magnetic fields, *Sweep generators, Circuits.

The problem of the magnetic sweep of mass-spectra was solved during the development of an analytic mass spectrometer based on the isotopic MS-1 mass-spectrometer, where a variation in the electromagnetic mass-separator current of from 20 to 140 ma was required to overlap the 12-200 mass range for a 1900-v accelerating voltage (taking hysteresis into account). The elimination of the magnetic field fluctuations is attained by a rigorous current stabilization in the windings of the electromagnet for each value of this current built up during the sweep process.

Meisel, A. and Ehrhardt, H.
A HIGH-RESOLUTION FOCUSING HIGH-VACUUM X-RAY SPECTOGRAPH. 7 Feb 62 [16]p. JPRS: 12384
Order from OTS or SLA $1.60 62-15952

Trans. of Experimentelle Technik der Physik (East Germany) 1961, v. 9, no. 1, p. 13-22.

DESCRIPTORS: *Spectrographic analysis, *X-ray spectrometers, Focusing, Goniometers, Power supplies, Vacuum apparatus

An X-ray apparatus is described which permits the determination of the influence of the chemical bond upon the characteristic X-ray emission and absorption spectra. The construction of the goniometer, crystal-holder, and X-ray tube are explained in detail. Crystal diffraction occupies an intermediate position between the cylindrical surface method and the free diffraction method. The vacuum tank is so constructed that its dimensions allow one to set the crystal in both reflection and transmission positions, and permits studied with radii of curvature as large as 1.3 meters. In order to demonstrate the characteristics of the apparatus as concerns flux intensity, dispersion, and resolutions, a few X-ray photographs are reproduced. The half-height bands of the Kα of copper (8th order), and of V (5th order) were measured and found to be 0.58 for Cu Kα_1, 0.70 for Cu Kα_2, 1.37 for V Kα_1, and 1.62 X for V Kα_2. (Author)

Optics

Boegenold, H.
THE DETERMINATION OF OPTICAL DEFECTS IN THE LENS. [1962] 2p.
Order from SLA $1.10 62-10624

Trans. of mono. Das Optische System des Mikroskops, n.p., 1959, Art. 9.3, p. 178-179.

DESCRIPTORS: *Optics, *Lenses, *Errors, Determination, Test equipment.

Gouffé, André.
CORRECTIONS FOR THE OPENINGS OF ARTIFICIAL BLACK BODIES CONSIDERING MULTIPLE INTERNAL DIFFUSION. PT. I. CORRECTION FOR EMISSIVE POWER [AND] PT. II. CORRECTION FOR TEMPERATURE GRADIENT, tr. by June Lee Walker. [1959] [12]p. 1 ref.
Order from OTS or SLA $1.60 59-19005

Trans. from [Revue d'Optique Théorique et Instrumentale (France) 1945, v. 24, nos. 1-3.

DESCRIPTORS: Corrections, *Blackbody radiation, Diffusion, Reflection, Temperature

Groth, R.
INVESTIGATION OF THE TOTAL REFLECTION OF SOFT X-RAYS. [1960] 7p. 5 refs. MDF G-176.
Order from OTS $0.50 62-11451

Trans. of Ann[alen] de[r] Phys[ik] (East Germany) 1959, 7 folge, v. 2, no. 7/8. p. 380-386.

DESCRIPTORS: *X-rays, Reflection, Glass, Silver, Gold

The striped reflection of soft 9-A wavelength soft X-rays has been investigated on glass, silver and gold evaporation layers. The reflection curves for glass and silver show the expected behavior while a strong anomaly occurs for gold. The waviness of the plane mirror used is determined from the photographic exposures and the microcrystalline surface roughness is estimated. (Author)

Long, B., Kantzer, M., and Orlu, M.
CONTRIBUTION TO THE METHODS FOR OBTAINING HIGHLY BIREFRINGENT GLASSES (Contribution aux Methodes d'Obstention de Verres Fortement Biréfringents). [1962] [12]p. (foreign text included) 5 refs. Order from SLA $1.60 62-14481

Trans. of mono. Congrès International du Verre (no. 4) [Paris, 1956] paper V-7, p. 1-4.

DESCRIPTORS: *Glass, *Refractive properties, Solid state physics, *Stresses, Thickness, Polarization, Light, *Deformation, High-temperature research, Wave characteristics, Fluid flow.

When submitted to external forces during solidification glass acquires a special permanent birefringence. For a given value of the "frozen" stress, the value of this birefringence depends largely on the composition of the glass. The paper gives instances of glasses leading to particularly big optical path differences, e.g several hundreds of millimicrons per centimeter of thickness. These glasses easily permit the production of uniformly birefringent plates of large size which may have practical applications, e.g. quarter wave plates for obtaining large beams of circular polarised light. (Author)

Trembach, V. V.
ILLUMINANTS EQUIPPED WITH POWERFUL XENON LAMPS (Svetil'niki s Moshchnymi Ksenonovymi Lampami). [1962] [11]p. 8 refs. AERDL T-1497. Order from OTS or SLA $1.60 62-25337

Trans. of Svetotekhnika (USSR) 1961 [v. 7] no. 8, p. 1-7.

DESCRIPTORS: *Xenon lamps, Lighting systems, Brightness, *Illumination, Optical equipment, Reflectors.

Experimental and theoretical investigation of mirror illuminants for high-powered xenon lamps permit the formulation of the following requirements. The material for the reflector must have a reflective coefficient of not less than 0.65. It is important that $\rho 3 = (0,85 \div 1)\ \rho$. The material of the mirror reflector and the flat inserts must be corrosion resistant and must be able to withstand temperatures up to 300°C. In the design of illuminants, the problem of cleaning, and restoring the mirror properties of, the reflector during operation must be taken into account. It is recommended that screens be made of ordinary steel (without luminescent covering) and that reenforcements be provided against buckling. The illuminant must be equipped with a spare lamp that switches on automatically when the original lamp burns out. The light aperture under the lamp must be covered by a protective screen that furnishes protection against splinters should the lamp break. The design of a single beam illuminant must provide for its rotation both around the vertical axis (support tower) and relative to the axis of the lamp. Precision of the end surfaces of lateral bearing planes that constitute the surface of reflector must be not less than 0.5 mm with relation to the theoretical profile. To reduce the danger of the reflector's buckling, it must be made of individual sheets whose one dimension must be equal to the length of the profile curve, and the other not more than 500 mm. (Author)

Solid State Physics

APPARATUS FOR MANUFACTURING SEMICONDUCTOR ELEMENTS. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9509, 27 July 62, by Nihon Electric Co., Ltd.

DESCRIPTORS: *Semiconductors, Production.

METHOD OF CONTACTING LEAD WIRE WITH SEMICONDUCTOR ELEMENT. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9516, 27 July 62, by Siemens und Halskie Aktiengesellschaft (West Germany).

DESCRIPTORS: *Semiconductors, Electric wire, Lead, Sliding contacts.

METHOD OF FABRICATING MULTI-ELEMENT SEMICONDUCTOR. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9508, 27 July 62, by Nippon Telegraph and Telephone Public Corp.

DESCRIPTORS: *Semiconductors, Production.

METHOD OF FORMING OHMIC CONTACT IN SEMICONDUCTOR. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8758, 20 July 62, by Sony Corp.

DESCRIPTORS: *Semiconductors, Sliding contacts, Resistance.

METHOD OF FUSING ELECTRODES TO SEMICONDUCTOR. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6861, 3 July 62, by N. B. Phillips.

DESCRIPTORS: *Semiconductors, Electrodes, Melting, Production.

METHOD OF MANUFACTURING ALLOY DIFFUSION TYPE SEMICONDUCTOR DEVICE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9505, 27 July 62, by Hitachi Ltd.

DESCRIPTORS: *Semiconductors, Alloys, Diffusion, Production.

METHOD OF MANUFACTURING DOUBLE-POLE SEMICONDUCTOR DEVICE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6556, 30 June 62, by Hitachi Ltd.

DESCRIPTORS: *Semiconductors, *Knife switches, Production.

METHOD OF MANUFACTURING NEGATIVE RESISTANCE TYPE SEMICONDUCTOR ELEMENT. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6857, 3 July 62, by Hitachi Ltd.

DESCRIPTORS: *Semiconductors, Negative resistance circuits, Production.

METHOD OF MANUFACTURING NEGATIVE RESISTANCE TYPE SEMICONDUCTOR ELEMENT. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9506, 27 July 62, by Hitachi Ltd.

DESCRIPTORS: *Semiconductors, Negative resistance circuits, Production.

METHOD OF MANUFACTURING SEMICONDUCTOR ALLOYS. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9510, 27 July 62, by Sony Corp.

DESCRIPTORS: *Semiconductors, Alloys, Production.

METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8760, 20 July 62, by International Business Machines Corp.

DESCRIPTORS: *Semiconductors, Production.

METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8763, 20 July 62, by Siemens Skertowerke Aktiengesellschaft.

DESCRIPTORS: *Semiconductors, Production.

METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8764, 20 July 62, by Siemens Skertowerke Aktiengesellschaft.

DESCRIPTORS: *Semiconductors, Production.

METHOD OF MANUFACTURING SILICON SEMICONDUCTOR DEVICE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8765, 20 July 62, by Siemens Skertowerke Aktiengesellschaft.

DESCRIPTORS: *Semiconductors, Silicon, Production.

METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9517, 27 July 62, by Telefunken Gesellschaft.

DESCRIPTORS: *Semiconductors, Production.

METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE HAVING ALUMINUM ELECTRODE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6862, 3 July 62, by N. B. Phillips.

DESCRIPTORS: *Semiconductors, *Aluminum electrodes, Production. Electrodes.

METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE HAVING P-N JUNCTION. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6864, 3 July 62, by Siemens und Halskie Aktiengesellschaft (West Germany).

DESCRIPTORS: *Semiconductors, Junction boxes, Production.

METHOD OF MANUFACTURING SEMICONDUCTOR DEVICES. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6865, 3 July 62, by Siemens Skertowerke Aktiengesellschaft.

DESCRIPTORS: *Semiconductors, Production.

METHOD OF MANUFACTURING SEMICONDUCTOR DEVICES. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6866, 3 July 62, by Siemens Skertowerke Aktiengesellschaft.

DESCRIPTORS: *Semiconductors, Production.

METHOD OF MANUFACTURING SEMICONDUCTOR HAVING RECTIFYING JUNCTION. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6858, 3 July 62, by Siemens und Halskie Aktiengesellschaft (West Germany).

DESCRIPTORS: *Semiconductors, Rectifiers, Junction boxes, Production.

METHOD OF MANUFACTURING SILICON SEMICONDUCTOR DEVICE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6867, 3 July 62, by Siemens Skertowerke Aktiengesellschaft.

DESCRIPTORS: *Semiconductors, Silicon, Production.

METHOD OF MANUFACTURING SILICON SEMICONDUCTOR DEVICE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-9507, 27 July 62, by Nihon Electric Co., Ltd.

DESCRIPTORS: *Semiconductors, Silicon, Production.

METHOD OF SEALING SEMICONDUCTOR DEVICE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8759, 20 July 62, by Shin Dengen Kogyo K.K.

DESCRIPTORS: *Semiconductors, *Seals.

PROCESS OF FORMING JUNCTION SEMICONDUCTOR DEVICE HAVING FOIL. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6557, 30 June 62, by Clevite Corp.

DESCRIPTORS: *Semiconductors, Foils, Junction boxes.

SEMICONDUCTOR BARRIER-LAYER ELECTRODE DEVICE, PARTICULARLY TRANSISTOR OR CRYSTAL DIODE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8425, 17 July 62, by N. B. Phillips.

DESCRIPTORS: *Semiconductors, Electrodes, Transistors, Diodes, Crystals.

SEMICONDUCTOR DEVICE HAVING PROTECTIVE ELECTRODES. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-8424, 17 July 62, by Nihon Hose Kyokai.

DESCRIPTORS: *Semiconductors, *Electrodes.

SEMICONDUCTOR IMPEDANCE DEVICE AND ITS MANUFACTURE. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6859, 3 July 62, by International Business Machines Corp.

DESCRIPTORS: *Semiconductors, Impedance, Production.

Danilenko, V. M.
THE THEORY OF X-RAY SCATTERING BY DOMAIN STRUCTURES. [1962] 11p. (9 refs. 20 formulas omitted) 5 refs.
Order from OTS or SLA $1.60 62-14771

Trans. of #Fizika Metallov i Metallovedenie (USSR) 1960, v. 10, no. 1, p. 3-8.

DESCRIPTORS: Solids, Crystals, *X-rays, Scattering, Theory, *Crystal structure, *X-ray diffraction analysis.

The intensity of the scattering of the X-rays by various domain structures may be calculated in general if the geometric distribution of the domain boundaries is known, and the nature of the domain structure becomes expressed only in the intensities of the regular reflection and the diffuse background, but will not affect the location and form of the true reflection. A periodical domain structure reflects the X-rays not only in the directions which are given by Wulff's Law and Bragg's Law, but also in some other directions. A non-periodical domain structure causes a widening of some of the regular reflections, they might even split. A disrupting of the periodicity leads to a broadening of the reflections. If such disruption causes the structures to become nonperiodic, then part of the reflections (satellites) will disappear, a part will become wider, and the results will change into the ones for the preceding case. The special cases of domain structures, like the antiphase domains of ordering (the defective packing of densely packed atomic layers and the modulated structures) are expressed by formulas which are portions of a general set of formulas which are derived. (Author)

Danilov, V. I. and Krasnitskii, S. Ya.
X-RAY INVESTIGATION OF FUSED KNO_3 AND $NaNO_3$ SALTS [Rentgenograficheskoe Issledovanie Rasplavlennykh Solei KNO_3 i $NaNO_3$]. [1961] 6p. 4 refs. MDF D 100.
Order from OTS $0.50 62-11212

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 4, p. 661-664.

DESCRIPTORS: Potassium compounds, Sodium compounds, Nitrates, Salts, *Fuzed materials, *Crystal structure, X-ray diffraction analysis.

The integral analysis of the distribution curves of the electron densities for the KNO_3 and $NaNO_3$ salts leads to the following conclusions. The structural units in melted KNO_3 and $NaNO_3$ salts should be considered to be the metal ion and the NO_3 radical. The NO_3 structural radical in the liquid salts is conserved just as in the crystals; hence, the radical can be considered as composed of permanently connected nitrogen and oxygen atoms. Ordering in the location of the structural units - ions and radicals - is observed in the KNO_3 and $NaNO_3$ salts. Hence, the advantageous distances between the ions appear to be the same as in the solid phase.

Dorfman, Ya. G.
PARAMAGNETIC AND DIAMAGNETIC RESONANCE OF CONDUCTION ELECTRONS [Paramagnitnyi i Diamagnitnyi Rezonans Elektronov Provodimosti]. [1961] 3p. 4 refs. MDF D 119.
Order from OTS $0.50 62-11231

Trans. of A[kademiya] N[auk] SSSR. Doklady, v. 81, no. 5, p. 765-766.
Other translations are available from SLA as RT-2633 and from OTS $0.50 as 61-31475, NRL Trans-845.

DESCRIPTORS: *Paramagnetic resonance, *Electrons, Conductivity, Magnetic fields, *Resonance absorption, Energy, Spin, Metals, Semiconductors, Resonance.

Along with the well-known paramagnetic effect, the existence of diamagnetic resonance is expected for conduction electrons. This effect is related directly to the diamagnetism of the conduction electrons. The diamagnetism of conduction electrons is caused by the fact that the conduction electrons, in the presence of an external constant magnetic field H, describe quantized orbits in a plane perpendicular to H. For completely free conduction electrons the frequencies coincide for maximum diamagnetic and paramagnetic resonance. For quasi-coupled electrons the maximum resonance frequencies do not coincide. Experimental measurement of the maximum paramagnetic resonance frequency would permit the direct determination of numerical values of the effective mass for different electron conductors and for various conditions.

Eder, F. X. and Häfner, H.
THE INTERNAL DAMPING MODE OF Fe-C-N ALLOYS AND OF Al Mg 1. 7 Feb 62 [11]p.
JPRS: 12377.
Order from OTS or SLA $1.60 62-15955

Trans. of Experimentelle Technik der Physik (East Germany) 1961, v. 9, no. 1, p. 37-43.

DESCRIPTORS: *Iron alloys, *Carbon alloys, *Nitrogen, *Aluminum alloys, *Magnesium alloys, Grains (Metallurgy), Damping.

With the aid of an electromagnetic torsion apparatus, the internal damping of Fe-C-N alloys and of Al Mg 1 was measured at different frequencies and temperatures. The well-defined damping peak of Fe-C-N alloys is attributable to the overlapping of the carbon and nitrogen maxima. The calculated activation energies lie in the order of magnitude given in the literature for the diffusion constants; however, the results reported in this paper manifest a concentration dependency. The Al Mg 1 samples exhibited a surprising damping behaviour. In the frequency range from 1 cycle/sec. to 10^{-3} cycle/sec., there result two

characteristics relaxation maxima. The time-independant 1 cycle/sec peak can be explained by a grain boundary effect; on the other hand, the second damping maximum is presumably due to the role played by an alternating mechanism between trace-atom penetration and dislocations. (Author)

Fakidov, I. G. and Grazhdankina, N. P.
ELECTRICAL PROPERTIES OF CHROMIUM SULFIDES. [1961] 6p. 7 refs. MDF F-129.
Order from OTS $0.50 62-11411

Trans. of [Akademiya Nauk SSSR]. Inst[itut] Fiz[iki] Metallov [Sverdlovsk]. Trudy, 1954, no. 15, p. 65-69.

DESCRIPTORS: *Semiconductors, *Sulfides, *Chromium compounds, Electrical properties, Resistance, Electromagnetic properties.

On the basis of measurements carried out, the conclusion is drawn that chromium sulfides with concentrations from 50 to 57 at.-% S should be referred to the class of substances intermediate between conductors and metals. The impurity levels in such semiconductors are not located in the forbidden band but within the conduction band; the metallic behavior of the electrical conductivity (in the alloy with 54 at.-% S) and the small residual resistance of the substance at 0^{0} K is a confirmation of this viewpoint. In addition, the slight forbidden bandwidth affords the possibility for electrons to make the transition into the conduction band directly from the normal band. In this case, the electron is generated simultaneously with a hole, consequently, the effect of the electrons and holes is cancelled in the Hall effect, which leads to the absence of the Hall effect. In alloys with a greater than 57 at.-% S) content, there are no electrons in the conduction band at normal temperatures and, consequently, these alloys become insulators at very low temperatures.

Fastov, N. S.
ENERGY OF THE DISTORTED CRYSTALLINE LATTICE. [1961] 13p. 8 refs. MDF F 103.
Order from OTS or SLA $1.60 62-19901

Trans. of Prob[lemy] Metalloved[eniya] i Fiziki Metallov (USSR) 1955, v. 4, p. 377-387.

DESCRIPTORS: *Crystal structure, X-ray diffraction analysis, *Metals, Deformation, Plasticity.

The lattice distortion energy depending on the magnitude of the deformation in the homogeneous deformation case is calculated for the extension (or compression) of a rod.

Feofilov, P. P.
ABSORPTION AND LUMINESCENCE OF DIVALENT RARE-EARTH IONS IN CRYSTALS OF ARTIFICIAL AND NATURAL FLUORITE. [1960] 9p. 9 refs. MDF F-127.
Order from OTS $0.50 62-11557

Trans. of Optika i Spektr[oskopiya] (USSR) 1956, v. 1, no. 8, p. 992-999.

DESCRIPTORS: *Fluorspar, Single crystals, *Rare earth elements, Samarium, Europium, Ytterbium, Absorption, Luminescence, *Optics

The absorption and luminescence spectra and also the temperature quenching and the contraction of the duration of the excited state of artificial fluorite (CaF_2) single crystals containing divalent samarium, europium and ytterbium ions have been investigated. The role of divalent rare-earth elements in the formation of the colors and luminescence of natural fluorite has been clarified. Considerations are expressed on the character of the electronic transitions in divalent rare-earth ions. (Author)

Gaidukov, M. G. and Pavlov, V. A.
DEPENDENCE OF THE CREEP OF NICKEL-COPPER ALLOYS ON CONCENTRATION OF THE SOLID SOLUTION AND CONDITIONS OF DEFORMATION (Zavisimost' Polzuchesti Splavov Nikel' - Med' ot Kontsentratsii Tverdogo Rastvora i Ustovii Deformirovaniya). Aug 61 [15]p. (foreign text included) 12 refs. NLL M. 3514.
Order from OTS or SLA $1.60 62-24649

Trans. of Issled[ovaniya] po Zharoproch[nym] Splavam (USSR) 1960, v. 6, p. 64-70.

DESCRIPTORS: *Nickel alloys, *Copper alloys, Creep, Deformation.

The rate of creep of Ni-Cu alloys in the temperature range 500-700°C depends on alloy composition and conditions of deformation. At relatively low temperatures and high deformation stresses, the rate of creep is in reverse proportion to the value of yield point. The higher the yield point, the lower is the rate of creep. The greatest strength is shown by alloys with 40% Cu. In the region of high temperatures and sufficiently low deforming stresses, lying well below the yield point, the rate of creep increases with increasing concentration of the solid solution. The behaviour of alloys under lead is determined by the parts played by slip-type and diffusional plastic deformation. (Author)

Gasilova, E. B. and Sokhor, M. I.
DECIPHERING THE CRYSTALLINE STRUCTURE OF SiC VIII [Rasshifrovka Kristallicheskoi Struktury SiC VIII]. [1961] 3p. 2 refs. MDF G-105.
Order from OTS $0.50 62-11197

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1952, v. 82, no. 2, p. 249-251.

DESCRIPTORS: *Silicon compounds, Carbides, Crystals, *Crystal structure, X-ray diffraction analysis.

A crystal of a transparent yellow color without an externally apparent crystalline shape was found among carborundum crystals. The crystal was pulverized since it was required to determine its phase diagram. A powder roentgenogram was obtained in radiation filtered by copper. The values of the interplanar distances, calculated from the roentgenogram, and the

visual estimate of the interference intensities do not afford the possibility of referring the crystal to any one of the known types of silicon carbide structure. The structure of the crystal is characterized by the symbol 4. 4 which specifies that this packing belongs to the three-dimensional D_{6h}^{4} = C6/mmc group and, therefore, that the binary tetrahedral polar structure belongs to the C_{6v}^{4} = C6mc group. This new type is called SiC VIII.

Gasilova, E. B., Beletskii, M. S., and Sokhor, M. I.
DECIPHERING THE NEW STRUCTURE OF SILICON CARBON, SiC VII [Rasshifrova Novoi Struktury Karbida Kremiya SiC VII]. [1961] 6p. 6 refs. MDF G-104.
Order from OTS $0.50 62-11198

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1952, v. 82, no. 1, p. 57-60.

DESCRIPTORS: *Silicon compounds, Carbides, Crystals, *Crystal structure, X-ray diffraction analysis.

On the basis of the theory of dense spherical packing and by using the methods of numerical and literal symbols on a roentgenogram of a powder, the first new type of silicon carbide structure, SiC VII, was deciphered completely. The numerical symbol 2. 2. 2. 3 found, indicates that the various SiC packings can be generated not only by 'spoiling' of a SiC II modification with the symbol 3. 3, but on the basis of a SiC III modification with the 2. 2. Starting from this, the possibility of the existence of a number of SiC packings is proposed, for which the laminarity n_c differ by 12. (See also 62-11197)

Giterman, M. Sh. and Moskalenko, S. A.
ON THE STRUCTURE OF THE ENERGY BANDS IN IONIC CRYSTALS. [1959] 8p. 14 refs. MDF G-172.
Order from OTS $0.50 62-11446

Trans. of #Fiz[ika] Met[allov] i Metall[ovedenie] (USSR) 1959, v. 8, no. 2, p. 170-175.

DESCRIPTORS: *Alkali metals, *Halides, *Crystals, Energy, Electron transitions.

An investigation has been made of the structure of the electron band and the three hole bands in crystals of the alkali-halide type, taking into account degeneracy of the electronic states at halide sites and the possibility of charge carrier motion in the lattices of both types of ions. An approximate diagonalization of the Hamiltonian of the many electron problem is carried out and group-theoretical methods are applied to investigate the band structure in certain directions in $\vec{K}$-space. (Author)

Glazov, V. M. and Liu, Chen-yuan.
INVESTIGATION OF THE SEPARATE AND JOINT SOLUBILITY OF ALUMINUM AND ANTIMONY IN SILICON. [1961] 8p. 10 refs. MDF G-194.
Order from OTS $0.50 62-11359

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Met[allurgiya] i Topl[ivo] 1960, no. 4, p. 150-155.

DESCRIPTORS: *Semiconductors, Silicon, Impurities, Aluminum, Antimony, Solubility

A series of binary and ternary alloys were studied. Silicon of purity 99. 9999 % Si., aluminum AB-0000 (99. 998 % Al.) and antimony Su-000 (99. 995 % Sb.) were used as original materials. The solids in the Si-Al system had a retrograde character. The maximum solubility corresponds to a 1000°C temperature and equals 1. 1 at. -% Al. (1. 2 wt. -%). The solubility drops rapidly with a further lowering of the temperature. The solidus curve in the Si-Sb system also has a retrograde character. The maximum solubility corresponds to a 850°C temperature and is ~0. 2 at. -% Sb (~0. 8 wt. -%). The solubility is ~0. 1 at-% Sb at the eutectic temperature. The admixture of aluminum leads to a significant increase in the solubility of antimony, which achieves a maximum in the Si-Al-Sb section at 1100°C. Therefore, aluminum contributes to keeping antimony in a silicon solution to a certain degree.

Gobrecht, H., Tausend, A., and Bach, I.
THE FARADAY EFFECT OF AMORPHOUS SELENIUM FILMS. [1962] 5p.
Order from ATS $5.50 ATS-76P61G

Trans. of Z[eitschrift für] Physik (West Germany) 1962, v. 166, p. 76-80.

DESCRIPTORS: *Selenium films, *Magneto-optic rotation.

Goryaga, A. N. and Koroleva, L. I.
ELECTRICAL AND GALVANOMAGNETIC PROPERTIES OF A NICKEL-ZINC FERRITE. [1960] 7p. 6 refs. MDF G-181.
Order from OTS $0.50 62-11542

Trans. of Moscow U. Vestnik. [Seriya] M[atematiki] M[ekhaniki] A[stronomii] F[iziki] Kh[imii] (USSR) 1959 [v. 14] no. 3, p. 97-104.

DESCRIPTORS: *Ferrites, Electrical properties, Magnetic properties, Nickel compounds, Zinc compounds

A ferrite sample of 14. 5% NiO, 36% ZnO, 49. 5% Fe_2O_3 composition was obtained by means of the usual ceramic technology at a 1320° sintering temperature, by holding for 5 hours and then allowing to cool in the furnace. Three inflection points were found. The first inflection corresponds to a Curie temperature of 80. 5°. The nature of the other two break-points is not clear. The activation energies E_1 = 0. 17 eV; E_2 = 0. 25 eV; E_3 = 0. 31 eV and E_4 = 0. 23 eV (where E_1, E_2, E_3, E_4 are the activation energies in order of increasing temperature) were calculated from the values of the slopes of the curve $\log \rho = f(\frac{1}{T})$. Measurements at room temperature showed that the lateral and longitudinal galvanomagnetic effects of the ferrite have the same negative sign and approximately the same magnitude. The galvanomagnetic effect has a maximum for all fields in the 60° to 65° range: this maximum is very diffuse, probably due to the nonuniformity of the composition of the ferrite sample, by volume.

Grimmeiss, H. G., Rabenau, A. R. and others.
ON THE ELECTRICAL AND OPTICAL PROPERTIES OF SOME CHALKOGENIDES OF THE ELEMENTS OF THE IVth SUB-GROUP. [1962] [19]p. (11 figs. omitted) 15 refs.
Order from SLA $1.60 62-16199

Trans. of Zeit[schrift] fllr Elektrochemie (West Germany) 1961, v. 65 [no. 9] p. 776-[783].

DESCRIPTORS: *Titanium compounds, *Zirconium compounds, *Hafnium compounds, *Chalcogenides, *Crystal structure, Electrical properties, Optics, Spectrographic analysis, Photoconductivity.

Electrical and optical studies on single crystals of chalkogenides of the elements of the IV-th sub-group in particular of titanium are reported. The type of conductivity of those compounds was established. With the exception of the metallic conducting TiS the here discussed compounds are semi-conductors. The bandgaps' changes for trichalkogenides are reported. The influence of sulphur vacancies has been proved on TiS_2. The results are discussed on the basis of the crystal-chemical relations and present understanding of the appearance of the semi-conductivity in the compounds of the transition metals. (Author)

Ioffe, A. V.
RECTIFICATION AT THE BOUNDARY BETWEEN TWO SEMICONDUCTORS. [1962] [16]p. 10 refs.
Order from OTS or SLA $1.60 62-16162

Trans. of Zhur[nal] Tekhn[icheskoi] Fiz[iki] (USSR) 1948, v. 18, no. 12, p. 1498-1510.

DESCRIPTORS: *Semiconductors, Electric currents, Rectifiers, Electric fields, Electrical conductance

Karakushan, E. I. and Stafeev, V. I.
MAGNETODIODES. [1962] [10]p. 9 refs. [DSIR] NLL M.4826.
Order from OTS or SLA $1.10 62-24870

Trans. of #Fizika Tverdogo Tela (USSR) 1961, v. 3, no. 3, p. 677-686.
Another trans. is available from OTS or SLA $1.60 as 61-20495 [1961] [17]p.

DESCRIPTORS: *Semiconductors, *Diodes, *Magnetic fields, Intensity, Electrical effects.

For abstract see Technical Translations 7: 366, 1962.

Keler, E. K., Godina, N. A., and Degen, M. G.
ELECTRONO-MICROSCOPIC AND THERMOGRAPHIC INVESTIGATION OF SOLID PHASE REACTIONS IN THE OXIDE SYSTEMS HfO_2-BaO, HfO_2-SrO and HfO_2-CaO. [1962] 12p. (6 figs. 1 table omitted) 10 refs.
Order from OTS or SLA $1.60 62-14676

Trans. of #Zhurnal Priklad[noi] Khim[ii] (USSR) [1961] v. 34, no. 8, p. 1760-1775.

DESCRIPTORS: Solids, Crystals, Alkaline earth metals, *Hafnium compounds, *Barium compounds, *Strontium compounds, *Oxides, *Carbonates, Chemical reactions, *Electron microscopy, Dielectrics.

The formation, during the reaction of hafnium dioxide with carbonates of earth-alkali metals, of compounds $BaHfO_3$, $SrHfO_3$ and $CaHfO_3$ are accompanied by an increase in volume of the reacting mixture. The products obtained at 1000-1200° have a high porosity and brittle structure. In the process of the solid phase reaction there takes place a scaling of the interacting products with the reactive surface and a continuous stripping of the hafnium dioxide grain. Under these conditions there is a sharp decline in the role of volume diffusion and the rate of reaction is basically determined by the speed of the chemical interaction and surface diffusion. The considerable crumbling of the material excludes the possibility of obtaining dense, non-porous articles in a single process, combining synthesis of the compound with the calcination of articles prepared from them. Moreover, the formation of friable reaction products in the synthesis process facilitates their grinding. It is therefore expedient to have a separate synthesis followed by grinding of the product, its compression and calcination. (Author)

Kotyukov, Yu. N. and Burnysheva, A. N.
INFLUENCE OF ANISOTROPIC ELASTIC STRESSES ON FERROMAGNETIC RESONANCE IN POLYCRYSTALLINE FERRITES. Vliyanie Anizotropnykh Uprugikh Napryazhenii na Ferromagnitnyi Rezonans v. Polikristallicheskikh Ferritakh) tr. by L. M. Matarrese. Feb 62 [12]p. (foreign text included) 5 refs.
Order from OTS or SLA $1.60 62-24619

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1960, no. 4, p. 126-130.
Another trans. is available from OTS or SLA $1.10 as 62-15609, MDF K-247 [1961] 6p.

DESCRIPTORS: *Ferrites, Resonance, Resonance absorption, Magnetostriction, Magnetic fields, Elasticity, Stresses.

For abstract see Technical Translations 7: 309, 1962.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
MASERS AND LASERS. July 62, 11p. 208 refs. OTS Selective Bibliography SB-488.
Order from OTS $0.10

DESCRIPTORS: *Masers, Microwave amplifiers, Amplifiers, Optics, Light, *Bibliography

Lists 208 foreign and domestic references on Masers, Lasers, Irasers, and Rasers added to the OTS collection during the period 1956 to July 1962. Covers research on maser state-of-the-art, ruby and other maser materials, solid state masers and rasers, molecular and atomic resonance devices, maser focusser research, electronic gear for masers, infrared masers, rutile masers, laser properties and coherent light sources among other subjects. (Author)

Oswald, F.
OPTICAL DETERMINATION OF THE ENERGY GAP AS A FUNCTION OF TEMPERATURE IN A^{III} B^{V}-TYPE SEMICONDUCTORS. [1962] 10p. 24 refs.
Order from SLA $1.10 62-16588

Trans. of Z[eitschrift für] Naturforsch[un]g (West Germany) 1955, v. 10a, p. 927-930.

DESCRIPTORS: *Semiconductors, Energy, Temperature, *Indium compounds, *Gallium compounds, Arsenides, Phosphides, Antimonides.

Ryvkin, S. M. and Khansevarov, R. Yu.
SPECTRUM OF INFRARED QUENCHING OF THE PHOTOCONDUCTIVITY IN THE CdS-CdSe SOLID SOLUTIONS. [1961] [6]p. (3 figs. omitted) 10 refs.
Order from OTS or SLA $1.10 62-10665

Trans. of #[Fizika Tverdogo Tela (USSR) 1960] v. 2, p. 88-90.

DESCRIPTORS: *Cadmium compounds, *Sulfides, *Selenides, Solids, Solutions, Semiconductors, *Photoconductivity, Infrared radiation, Spectrographic analysis, Absorption, Temperature

Saint-James, Daniel.
COLORED CENTER IN ALKALINE HALOGENS. [1962] [47]p. (21 figs. omitted) 61 refs.
Order from SLA $4.60 62-16519

Trans. of Journal de Physique et le Radium (France) [1957] v. 18 [no. 4] p. 260[-279].

DESCRIPTORS: *Color centers, *Crystals, *Alkali metals, *Halogens, Colors, *Colloids, Radiation effects, Resonance absorption, Spectographic analysis, Bibliography

Samoilovich, A. G., Korenblit, I. Y., and Dakhovskii, I. B.
THE ANISOTROPIC SCATTERING OF ELECTRONS BY IONIZED IMPURITIES. [1962] [10]p. 4 refs.
Order from OTS or SLA $1.10 62-10650

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 139, no. 2, p. 355-358.

DESCRIPTORS: *Electrons, Scattering, Ionization, Impurities, *Semiconductors, *Dielectrics, Germanium, Silicon.

Calculations show that the results of F. Ham (Phys. Rev. 100: 1251, 1955) are correct only at extremely small values of γ^2 (10^{-14} to 10^{-16}), which essentially do not exist in semiconductors.

Smirous, Karel and Stourac, Ladislav.
SOLID SOLUTIONS OF Bi_2Te_3 AND Sb_2Te_3 AS P-CONDUCTING MATERIALS FOR SEMI-CONDUCTOR THERMOCOUPLES. [1962] 3p. (1 fig. omitted) 12 refs.
Order from SLA $1.10 62-16576

Trans. of Zeitschrift für Naturforschung (West Germany) 1959, v. 14a [no. 9] p. 848-849.

DESCRIPTORS: *Semiconductors, *Thermocouples, Bismuth compounds, Antimony compounds, *Tellurides.

Tanaka, Tetsuro.
ELECTRICAL-ACOUSTIC TRANSFORMER UTILIZING PIEZO-EFFECT AT RECTIFYING JUNCTION OF SEMICONDUCTOR. 16 Aug 62.
Order from WBI $2.00

Trans. of main claims, including drawings of published Japanese patent 37-6855, 3 July 62.

DESCRIPTORS: *Semiconductors, Junction boxes, Rectifiers, *Piezoelectric effect, Audiofrequency transformers, Transformers.

Galkin, A. A., Kan, Ya. S., and Lazarev, B. G.
ON CERTAIN PECULIARITIES OF THE TRANSITION TO THE SUPERCONDUCTING STATE, I. [1960] 8p. 4 refs. MDF G-185.
Order from OTS $0.50 62-11538

Trans. of Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1950, v. 20, no. 10, p. 865-870

DESCRIPTORS: Tin, *Superconductivity, Magnetic fields, Physical properties, Temperature, Metals, Resistance

It is shown that the resistance of a metal in the region of the transition from the normal to the superconducting state is not a monotonic function of temperature. The effect of a magnetic field on the character of this phenomenon has been studied. It is shown that there is a connection between the observed effect and the kinetics of the transition. (Author)

Galkin, A. A., Lazarev, B. G., and Bezuglyi, P. A.
ON CERTAIN PECULIARITIES OF THE TRANSITION TO THE SUPERCONDUCTING STATE, II. [1960] 11p. 7 refs. MDF G-187.
Order from OTS $0.50 62-11452

Trans. of Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1950, v. 20, no. 11, p. 987-994

DESCRIPTORS: Tin, *Superconductivity, Inhibition, Electric fields, Physical properties, Metals, Resistance

By two independent methods the velocity of motion of the boundary between the normal and superconducting states has been determined to be ($v \sim 10^3$ cm/sec). It is shown that this velocity is different for the destruction of superconductivity by constant and by alternating magnetic fields. (Author) (See also 62-11538)

Geilikman, B. T.
ON THE THEORY OF SUPERCONDUCTIVITY [K Teorii Sverkhprovodimosti]. [1961] 6p. 7 refs. MDF G-108.
Order from OTS or SLA $0.50 62-11196

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 94, no. 4, p. 659-662.

DESCRIPTORS: *Cryogenics, *Superconductivity, Hydrodynamics, *Plasma physics, Mathematical analysis.

An analysis shows that the longwave excitations of Bose-plasma coincide with the hydrodynamic excitations.

Gershman, B. N. and Kovner, M. S.
ON SINGULARITIES OF QUASI-TRANSVERSE MAGNETOHYDRODYNAMIC WAVE PROPAGATION IN A PLASMA. [1959] 7p. 4 refs. MDF G-160.
Order from OTS $0.50 62-11442

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1958, v. 1, no. 3, p. 19-24.

DESCRIPTORS: *Magnetohydrodynamics, Propagation, Magnetic fields, Plasma physics.

The propagation of magnetohydrodynamic waves in a plasma is analyzed for directions, which are almost perpendicular to the magnetic field. The contradiction between the results of the phenomenological and microscopic analyses is eliminated. (Author)

Gil'denburg, V. B. and Miller, M. A.
ACCELERATION OF A PLASMOID DURING PASSAGE THROUGH AN INHOMOGENOUS ELECTROMAGNETIC FIELD. July 62 [3]p. 8 refs.
Order from ARS in Its Journal, v. 32, no. 7, $3.00

Trans. of Izvestiya Vysshikh Uchebnyk Zavedenii. Radiofizika (USSR) 1960, v. 3, no. 1, p. 97-101. Another trans. is available from OTS $5.00 in 61-21270, JPRS-7377, 14 Feb 61, 375p.

DESCRIPTORS: *Plasma physics, Motion, Acceleration, Velocity, Polarization, *Electromagnetic fields.

Mamyrin, B. A.
PULSE METHOD OF INVESTIGATING THE FUNDAMENTAL PROPERTIES OF THE GASEOUS DISCHARGE. June 57, 9p. 2 refs.
Order from OTS or SLA $1.10 62-14062

Trans. of Zhur[nal] Tekh[nicheskoi] Fiz[iki] (USSR) 1953, v. 23, no. 5, p. 904-912.

DESCRIPTORS: *Gas discharges, Plasma physics, Electrons, Temperature, Frequency, Pulse generators, Voltage, Oscilloscopes, Space charges, Density.

A method of measuring electron temperature, charge density, and space potential by means of probes fed by pulse voltages, which permits the extension of the probe method into the area of high discharge currents, is examined. The specifications of the test equipment making it possible to perform such measurements are given. (Author)

Office of Technical Services, Dept. of Commerce, Washington, D. C.
MAGNETOHYDRODYNAMICS. Jan 62, 11p. 166 refs. OTS Selective Bibliography SB-426, suppl. 1.
Order from OTS $0.10 OTS SB-426 Suppl. 1

DESCRIPTORS: *Magnetohydrodynamics, *Bibliography, *Plasma physics, Shock waves, Magnetic pinch, Theory, Power, Energy

Lists 185 foreign and domestic references added to the OTS collection during the period Sep 60-Jan 62. Covers research on basic theory and concepts, power generation and energy conversion, plasma physics, pinch dynamics, plasma shock waves, surface disturbances, magnetohydrodynamic flow among other subjects. (Author)

Thermodynamics

Brodyanskii, V. M. and Leites, I. L.
THE TEMPERATURE GRADIENT IN THE RANQUE-HILSCH TUBE. 15 Jan 62 [13]p. 18 refs. FTD-TT-61-157; AD-270 757.
Order from OTS or SLA $1.60 62-15809

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 12, p. 72-77.

DESCRIPTORS: *Hilsch tubes, *Temperature, Vortices, *Gases, *Gas flow, Thermodynamics, Kinetic theory, Nozzles, Velocity, Cooling.

Devoino, A. N.
THE CONTEMPORARY STATE OF THE QUESTION OF HEAT EXCHANGE IN RAREFIED GASES. 31 Jan 62 [19]p. 11 refs. FTD-TT-61-202; AD-272 540.
Order from OTS or SLA $1.60 62-19277

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 2, p. 119-130.

DESCRIPTORS: *Superaerodynamics, Gas flow, *Low pressure research, Thermal conductivity, Convection, Transport properties, *Thermal diffusion, *Heat transfer, Kinetic theory.

Fiorani, M. and Oleari, L.
THERMODYNAMIC CALCULATIONS IN TERNARY LIQUID SYSTEMS (Considerazioni Termodinamiche su Sistemi Liquidi Ternari). [1962] [16]p. (foreign text included) 12 refs.
Order from SLA $1.60 62-16021

Trans. of Metallurgia Italiana, 1957 [v. 49] no. 9, p. 680-683.

DESCRIPTORS: *Liquid metals, *Thermodynamics, Vapor pressure, Zinc alloys, Cadmium alloys, Antimony alloys, Numerical analysis.

Using relatively scarce published thermodynamic data on ternary systems, the authors have limited themselves to a discussion of analogies between the various metals and the various systems. (Author)

Gol'denberg, S. A. and Pelevin, V. S.
INFLUENCE OF PRESSURE ON THE FLAME PROPAGATION RATE IN A TURBULENT STREAM. [1960] 9p. 12 refs. MDF G-184.
Order from OTS $0.50 62-11539

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: E[nergetika] i A[vtomatika] 1959, no. 2, p. 26-31.

DESCRIPTORS: *Flame propagation, Pressure, Physical properties, Turbulence.

The process of flame propagation at pressures below atmospheric in combustible mixtures well-mixed beforehand is considered. (Author)

Ryabinin, Yu. N.
GASES AT HIGH DENSITIES AND TEMPERATURES, tr. by H. K. Zienkiewicz. 1961, 1v.
Order from PP 25s

Trans. of mono. [Gazy pri Bol'shikh Plotnostyakh i Vysokikh Temperaturakh, Moscow, 1959, 71p.].

DESCRIPTORS: *Gases, *High temperature research, *High pressure research, Density, Temperature

Schmidt, Ernst.
THERMAL RADIATION FROM INDUSTRIAL SURFACES AT ORDINARY TEMPERATURES. [1962] [111]p. 29 refs.
Order from SLA $9.60 62-16103

Trans. of Gesundheits-Ingenieur. [Beihefte. Reihe] 1 (Germany) 1927, v. 20.

DESCRIPTORS: *Thermal radiation, *Heat transfer, *Surfaces, Temperature, Blackbody radiation, Metals, Surface properties, Materials, Surface temperatures, Thermionic emission.

Sidorov, E. A.
ON THE INTERACTION OF CONVECTION AND RADIATION IN AN ABSORBING MEDIUM (O Vzaimodeistvii Konvektsii i Izlucheniya v Pogloshchayushchei Srede). [1962] [11]p. (foreign text included) 6 refs.
Order from OTS or SLA $1.60 62-16099

Trans. of Akad[emiya] Nauk SSSR. Otd[elenie] Tekh-[nicheskikh] Nauk. Izvest[iya]: Mekhanika i Mashinostroenie, 1959 [no. 5] p. 134-136.

DESCRIPTORS: *Heat transfer, *Convection, *Thermal radiation

Stationary motion is analyzed in a plane of an incompressible liquid (with constant physical characteristics) near a nonisothermic surface.

Vukalovich, M. P., Dzampov, B. V., and Zubarev, V. N.
TABLES OF THERMO-PHYSICAL PROPERTIES OF AMMONIA (Tablitsy Teplofizicheskikh Svoistv Ammiaka). Mar 62 [13]p. 15 refs. RTS 2037.
Order from OTS or SLA $1.60 62-24370

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 1, p. 63-69.

DESCRIPTORS: *Ammonia, Physical properties, Numerical analysis, Equations of state, Specific heat, Viscosity, Thermodynamics

Experimental and calculated data relating to thermodynamic and thermo-physical properties of NH_3 are treated by numerical and graphical methods. The results of this treatment are presented in the form of detailed tables of the properties of ammania. (Author)

Vukalovich, M. P., Dzampov, B. V. and Rassakazov, D. S.
THERMAL PROPERTIES OF WATER AND STEAM AT PRESSURES UP TO 1,000 kg/cm^2 IN THE TEMPERATURE RANGE 300 TO 1,000°C. [1962] [3]p. 6 refs. NLL M. 3544.
Order from OTS or SLA $1.10 . 62-24640

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 7, p. 48-49.

DESCRIPTORS: *Water, *Steam, *Thermodynamics, Pressure, Temperature.

The analysis and calculation of specific volumes is based on a review of the tabulated and experimental values quoted by a number of authors.

Zel'dovich, Ya. B. and Kompaneets, A. S.
TOWARD A THEORY OF HEAT DISTRIBUTION WITH HEAT CONDUCTIVITY DEPENDING ON TEMPERATURE. [1962] 17p.
Order from OTS or SLA $1.60 62-16195

Trans. of mono. [Akademik Abram Fedorovich Ioffe k Semidesyatiletiyu so dnya Rozhdeniya, Moscow] 1950, p. 61-71.

DESCRIPTORS: *Heat, Distribution, *Thermal conductivity, Heat tolerance, Temperature, Theory, Mathematical analysis, Partial differential equations, Stars, Theory.

Wave Propagation

Gershman, B. N.
ON NORMAL WAVES IN A HOMOGENEOUS PLASMA IN A MAGNETIC FIELD. [1959] 7p. 8 refs. MDF G-175.
Order from OTS $0.50 62-11533

Trans. of mono. [Pamyati Aleksandra Aleksandrovicha Andronova] (Memorial Volume to A. A. Andronov) [Moscow] 1955, p. 599-605.

DESCRIPTORS: *Plasma physics, *Electromagnetic waves, Propagation.

We made an analysis in which we tried to answer the questions which are still unclear in previous works devoted to an investigation of plasmon waves and we also tried to clarify the character of the thermal corrections for ordinary and extraordinary waves. Here, by presenting the results of computations carried out, we shall briefly indicate certain peculiarities in the behavior of the waves. (Author)

Grigoryan, S. S.
ON THE MOTION OF A SLENDER SOLID BODY UNDER THE EFFECT OF A STRONG SHOCK-WAVE. [1959] 3p. 1 ref. MDF G-162.
Order from OTS $0.50 62-11443

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Mekhonika i Mashinostroenia, 1959, no. 1, p. 165-166.

DESCRIPTORS: *Solids, Motion, *Shock waves, Propagation, Numerical analysis, Differential equations, Pressure

From an equation for the pressure that starts to affect a slender body as it penetrates into the shockwave and from the equation of the forward motion of the body an integro-dirrerential equation is derived that can be solved by the classical method of successive approximations. The solution constructed corresponds to the case when the body cross-sectional area is continuous, but a way is shown for taking into account discontinuities in certain cross-sectional areas.

Ovcharenko, E.
LONG-RANGE PROPAGATION OF UKV (ULTRA-SHORT WAVES). 17 Nov 60 [7]p. JPRS: 6265.
Order from OTS or SLA $1.10 62-23486

Trans. of Radio, Moscow (USSR) 1957, no. 5, p. 22-23.

DESCRIPTORS: *Electromagnetic waves, *Propagation, Radio transmission, Radio broadcasting, Radio waves, Ionosphere, Scattering

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ATOMIC BIOLOGICAL CHEMICAL WARFARE AND DEFENSE. 26 June 62 [542]p. 147 refs. JPRS: 14284.
Order from OTS or SLA $26.00 62-25519

Trans. of mono. Atomska Bioloshka Hemiska Orushia i Zashtita, Zagreb, 1960, 426p.

DESCRIPTORS: *Radiological warfare, *Biological warfare, *Chemical warfare, *National defense, *Nuclear energy, Nuclear power plants, Fast reactors, *Thermonuclear reactions, Nuclear weapons, Radioactivity, Detection, Dosimeters, Body, Radiation effects, *Radiobiology, Radioactive isotopes, Radiological contamination, *Nuclear explosions, Aerosols, Microbiology, Microorganisms, Man, Animals, Infections, Immunization, Veterinary medicine, Plants, Diseases, Fungicides, *Chemical warfare agents, Decontamination, Poisonous gases.

Contents:
Preface, by Rade Bulat
The structural conditions for the use of nuclear energy, by Pavle Savio
Nuclear reactors, by Milorad Ristic
Controlled thermonuclear reactions, by Milorad Mladjenovic
Nuclear explosives and nuclear weapons, by Nenad Raisic
Radiological detection, by Milovan Vidmar
Radiological dosimetry, by Dragutin Milhofer
Some problems about the effect of radiation on the body, by Srdjan Hajdukovic
Some problems of internal contamination by radioactive isotopes, by Velimir Vouk
Peaceful use of nuclear explosions, by Nenad Raisic
Microbial aerosols, by Adam Miljkovic
Microorganisms and their products as means of war against men and animals, by Cedomil Sebetic
Medical protection of people and animals from contagious diseases, by Cedomil Sebetic
Causes of plant diseases and fight against them, by Milivoje Perisic
Modern war poisons (nerve gases) by Svetolik Rasic
Technical aspects of modern antichemical protection, by Miljko Djuric
Medical aspects of the effect of modern war poisons, by Kazimir Baryla.

DIGEST OF TRANSLATED RUSSIAN LITERATURE. July 62 [17]p. 123 refs.
Order from ARS in Its Journal, v. 32, no. 7, $3.00

Trans. of abstracts from eleven selected Russian periodicals.

DESCRIPTORS: *Translations, USSR, Abstracting, Geophysics, Physics, Instrumentation, Optics, Spectrographic data, Metallurgy, Radio equipment, Electrical engineering, Astronomy.

THE FT-2 PANORAMIC CAMERA. 4 June 62 [13]p. JPRS: 13969.
Order from OTS or SLA $1.60 62-25006

Trans. of mono. (pamphlet) Panoramnyi Fotoapparat "FT-2", n.p., 1959, 20p. (p. 10 lacking).

DESCRIPTORS: *Wide field cameras, Cameras, Operation, Cleaning, Panoramic scanners.

This instruction pamphlet contains the basic rules for using the "FT-2" panoramic camera, designed for normal 35-millimeter film.

NEWS OF THE ACADEMY OF SCIENCES OF THE USSR, DEPARTMENT OF TECHNICAL SCIENCES, POWER ENGINEERING AND AUTOMATION 1960, NO. 6: SELECTED ARTICLES. 22 Jan 62 [24]p. 4 refs. FTD-TT-61-154; AD-270 756.
Order from OTS or SLA $2.60 62-15807

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1960, no. 6, p. 107-112 and 162-164.

DESCRIPTORS: *Statistical analysis, Theory, Information theory, Noise, Cooling, Signal-to-noise ratio, Electronics, Communication systems, *Probability, Statistical distributions, Partial differential equations, *Programming, *Computers, Statistical processes, Inequalities, *Feasibility studies.

Contents:
The best distribution of correct-reception regions in statistical-noise-suppresion coding, by Yu. N Mel'nikov
The theory of optimally fast processes in second-order systems, by A. B Savvin.

NORWEGIAN PATENTS IN ENGLISH TRANSLATION, NOS. 99153, 99793-99798, 99808, 99821, 99325-99833. [Aug 62] 18 nos.
Order from AC

DESCRIPTORS: *Patents, *Inventions, *Norway, *Finishes, Fishes, *Herring, Sulfides, Ores, Colloids, Phenols, Agricultural machinery, Internal combustion engines, Electric brakes, Magnetic brakes, Sterilizers, Cellulose, Containers, Couplings, Cargo vehicles, Loaders, Belts, Roofs, Motorcycles, Vehicles, Nitro radicals, Furfurals, Imides.

Contents:
99793 Device in apparatus for painting of objects by dipping, $4.40; 99794 Method and device for distribution of mineral wool which falls down on a band conveyor, $6.16; 99153 Machine for sorting according to length of herring and fish, $4.60; 99795 Method for calcinating sulfidic ores in fluidized layer, $1.38; 99796 Method for manufacture of a dispersing agent for manufacture of water-in-oil dispersions, $1.90; 99797 Method for manufacture of N(5 nitro-2-furfurylidene)-amino heterocyclic compounds, $1.00; 99798 Method for manufacture of 1-(5 nitro furfurylidene amino)-2-imidazolidinthion, $1.00; 99808 Method for extraction of fenol, $3.45; 99821 Device in the over-fork for hay grabs, $3.45; 99825 Free piston-combustion engine, $2.00; 99826 Electromagnetic brake, $15.40; 99827 Method for operation of water filled autoclave installation, etc., $1.85; 99828 Container for washing of cellulose, etc., $1.85; 99829 Coupling between trailer and pulling vehicle, $1.50; 99830 Device in truck for loading of the same, $3.00; 99831 Hanging device in belt driven vehicles, $1.00; 99832 Stand for carrying of roof, particularly for vehicles, $2.30; 99833 Device in A.C. operated signal horns on vehicles with flywheel magneto-ignition, particularly for light weight motorcycles, $1.00.

NORWEGIAN PATENTS IN ENGLISH TRANSLATION, NOS. 99810-99820. [Aug 62] 11 nos.
Order from AC

DESCRIPTORS: *Patents, *Inventions, *Norway, Cooling, *Refrigeration systems, *Nickel alloys, *Iron alloys, Oils, *Electric machinery, Glass, Dehydration, *Plugs (Electricity) *Wood, Impregnation, *Alkali metals, Hydroxides, *Geiger counters, *Aerosol generators, Fibers, Materials.

Contents:
99810 Cooling plant, $3.45; 99811 Nickel iron alloys, $1.00; 99812 Closing and coupling clamp for oil cables, $2.20; 99813 Device in electric machine intended for low power with collector, $1.65; 99814 Geiger-Muller counting tube, $2.30; 99815 Aerosol spraygun, $2.20; 99816 Method for manufacture of fiber material, etc., $3.85; 99817 Method and apparatus for manufacture of dehydration opening in multiplate glass units, $3.70; 99818 Expandible wall plug, $1.00; 99819 Method for manufacture of an impregnation means for wood work, $1.60; 99820 Method and apparatus for electrolytic manufacture of alkali, etc., $1.60.

NORWEGIAN PATENTS IN ENGLISH TRANSLATION, NOS. 99834-99836, 99838, 99841-99848, 99850-99856, 99858-99860, 99862-99869, 99873-99876, 99878-99879, 99881-99883, 99885-99886. 21 Aug 62, 41 nos.
Order from AC

DESCRIPTORS: *Patents, *Inventions, *Norway, Construction, Marine propellers, Electric power production, Evaporators, Welding rods, Drills, Salvage, Antibiotics, Documentation, Distilling plants, Aluminum compounds, Nitrides, Silicon compounds, Carbides, Servo motors, Electric cables, Electric terminals, Semiconductors, Reactors, Image intensifiers (Electronics), Solids, Paramagnetism, Coatings, Paints, Films, Vibration mechanisms, Molding, Metalorganic compounds, Plastics, Heaters, Armor, Lead alloys, Antimony alloys, Electrolysis, Magnesium, Pipes, Agricultural machinery, Silicon, Adhesives, Circular saws, Paper, Impregnation.

Contents:
99834 Device in upper landing of an accomodation ladder, $1.10; 99835 Propeller encasing for vessels, espec. fishing vessels, $0.65; 99836 Electric pulse supplier, $3.10; 99838 Device in multi-step evaporator of the "flash" type, $2.30; 99841 Welding electrode, $3.30; 99842 Bore crown used at diamond boring, $1.55; 99843 Method for raise operation and device for carrying out the method, $3.65; 99844 Method for the manufacture of a new antibiotic agent, $1.15; 99845 Method for cleaning of novobiocin, $2.30; 99846 Method for extraction of a concentrated solution of an antibiotic agent novobiocin, $3.25; 99847 Method for extraction of an antibiotic agent novobiocin in crystalline state, $2.30; 99848 Method for manufacture of a complex antibiotic agent, $3.05; 99850 Archivistic system, $6.30; 99851 Distilling apparatus, $18.80; 99852 Method for manufacture of aluminum nitride, $2.25; 99853 Method for manufacture of green silicum carbide, $1.70; 99854 Device in hydraulic wing servo motor, $2.75; 99855 Concentric protective conductor for flexible electric cables, $1.00; 99856 Electric contact device, $2.30; 99858 Semi-conductor device, $5.00; 99859 Device for extraction of heat from nuclear reactors, $1.85; 99860 Picutre intensifier of solid substances, $9.85; 99862 Method and arrangement for dosed conveyance of powder-formed paramagnetic material through a removal pipe, $1.85; 99863 Paint or protective coating, $1.95; 99864 Film forming mixtures, drying in the air, suitable for use as coating agents, $3.30; 99865

Vibration apparatus, $5.25; 99866 Double-side casting mould, $1.55; 99867 Metallized plastic object, $1.40; 99868 Device in electric heating apparatus, $2.30; 99869 Device for anchoring of pre-stressed armouring, $4.60; 99873 Lead-antimony alloy for plate grids of electric accumulators, $0.75; 99874 Anode and cell for melting electrolysis of alkali compounds, $2.55; 99875 Method for electro thermic manufacture of magnesium, $2.55; 99876 Method and apparatus for removal of a continuous sample of liquid material from a pipe, etc., through which a liquid is flowing, $2.90; 99878 Device in manure spreader with a spreading fan, $1.10; 99879 Device in manure spreader with spreading fan, $1.45; 99881 Device for manufacture of semi-conductor material, espec. silicon of highest degree of purity for electrochemical purposes, $3.05; 99882 Method for increase of adhesive ability on copper objects, $1.85; 99883 Grinding apparatus for circular saws, $2.45; 99885 Paper for impregnating agent, $0.40; 99886 Method for refining paper, $1.10.

NORWEGIAN PATENTS IN ENGLISH TRANSLATION. NOS. 99888-99889, 99891-99893, 99895-999000, 99902-99906, 99908-99914, 99916-99918, 99920-99921, 99923-99930, 99932-99935. 21 Aug 62, 40 nos.
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DESCRIPTORS: *Patents, *Inventions, *Norway, Trailers, Clamps, Life rafts, Torpedoes, Skis, Earth augers, Gases, Clothing, Liquids, Activated carbon, Television cameras, Fermentation, Identification systems, Coaxial cables, Switches, Cleaning fluids, Insulin, Construction, Electric furnaces, Memory devices, Electric connectors, Additives, Molding, Hoists, Recreation, Earth moving equipment, Disinfectants, Water, Separation, Belts, Slide fasteners, Drilling machines, Storage, Semiconductors, Reactors, Plastics, Containers.

Contents:
99888 Connective device between vehicle and trailer for transport of long objects, $1.00; 99889 Fastening devices for loading tanks for transport of liquid load, $1.75; 99891 Device in inflatable life raft, $6.90; 99892 Device in torpedo objecting tube, $2.20; 99893 Ski and method for manufacture of same, $1.55; 99895 Device in hydraulic digging machine, $1.10; 99896 Method and device for treatment of liquids with gas espec. used in biological processes, $8.62; 99897 Hanging device for clothing, garment, shoes, etc., $.80; 99898 Apparatus for treatment of solid fibrous material with a liquid agent, $4.40; 99899 Apparatus for separation of solid particles suspended in a liquid, $1.75, 99900 Active carbon, $.77; 99902 Apparatus for fermentation of solid organic substances, $4.15; 99903 Device in television camera, $2.85; 99904 Line identification equipment, $6.80; 99905 Co-axial cable, $2.30; 99906 Automatic excess current switch with manual, magnetic, possibly also thermic release, $4.60; 99908 Washing, cleansing and rinsing agent, espec. for auto windows in cold weather, $1.10; 99909 Method for the manufacture of insulin-crystal suspensions with protracted effect, $1.55; 99910 Building scaffold, $.80; 99911 Device for suction of concentrated not consumed oven gas from open electric melting furnaces, $2.65; 99912 Memory system with magnetic core, $8.90; 99913 Electric coupling device, $4.30; 99914 Additives containing mineral substances for fodder, $1.55; 99916 Method for manufacture of molded laminated object of sheet shaped material, etc., $3.60; 99917 Device for loading and unloading of trucks, $4.25; 99918 Jack for tractors, $.77; 99920 Device for toy, with a car movable on a plate $3.30; 99921 Mat of mineral wool and method for manufacture of same $1.10; 99923 Digging machine shovel, $2.70; 99924 Method for sterilizing water or acqueous solutions $1.25; 99925 Method at biological treatment of waste water and thereto pertaining device, $4.05; 99926 Method and apparatus for separation of solid particles with different weight and size in a liquid flow, etc., $5.05; 99927 Pants with elastically expandible belt, $4.60; 99928 Zipper with connecting locking elements, which may be inter-coupled, $1.35; 99929 Apparatus for thermic boring of long, mainly vertical holes in mountain, etc., $2.30; 99930 Device for storing and feeding of ribbon, $.77; 99932 Semiconductor diode, $2.30; 99933 Nuclear reactor, $5.24; 99934 Device rendering thermo-plastic yarn plastic, $2.30; 99935 Shelf, $2.00.

NORWEGIAN PATENTS IN ENGLISH TRANSLATION, NOS. 99939, 99941-99942, 99944, 99946, 99948, 99951, 99959-99960, 99964, 99966-99967, 99970, 99972-99980, 99982-99984, 99993-99996, 99998-100006, 100008, 100011-100012, 100015-100017. 21 Aug 62, 44 nos.
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DESCRIPTORS: *Patents, *Inventions, *Norway, *Zirconium alloys, Exhaust gases, Fuels, Valves, Metal plates, Corrosion, Containers, Telephones, Electrodes, Television, Boiling water reactors, Medical equipment, Computers, Combustion, Heat transfer, Life rafts, Propeller blades, Radiosondes, Echo ranging, Electric detonators, Sewing machines, Seeds, Metals, Oxides, Cast iron, Radio transmitters, Telephone communication systems, Transformers, Boilers, Glass, Transparent panels, Adhesives, Rubber, Stirrers, Electric furnaces, Agricultural machinery, Milking machines, Axle shafts, Copper, Cereals, Clamps.

Contents:
99939 Zircon alloy, $0.55; 99941 Method at and device for cleaning of heating gas flow espec. exhaust gas from combustion power engines, $8.32; 99942 Fuel mixture, $1.55; 99944 Manually and pressure operated valve, $1.70; 99946 Method and apparatus for forming of a particular mat for manufacture of pressed plates, $6.35; 99948 Device for protection of boat against corrosion, etc., $3.20; 99951 Collapsible carrying device for objects, $4.08; 99959 Apparatus for telephone calls, $3.30; 99960 Electrode casing for electrodes in galvanic elements and method for manufacture of such, $4.05; 99964 Plug-in secure against one-pole insertion of an object, $2.00; 99966 Television system, $5.90; 99967 Boiling reactor, $2.60; 99970 Carrying device for sanitary masks, $2.85; 99972 Device for zero setting of computer, $4.40; 99973 Combustible injection plant, $4.35; 99974 Heat transfer agent, $1.85; 99975 Stabilizing device for life rafts, $1.10; 99976 Emergency locking device for propeller with adjustible blades, $2.75; 99977 Radiosonde, $0.95; 99978 Apparatus for echo searching, $3.90; 99979 Electric

detonator, $5.75; 99980 Carrying device for objects, $3.55; 99982 Device in sewing machine for double seam for manufacture of zippers, $3.80; 99983 Method at malting of grain, $1.10; 99984 Method at reduction of metal oxides, $3.50; 99993 Method at reduction of metal oxides in shaft furnace, $2.15; 99994 Manufacture of cast iron, $2.00; 99995 Transmitter device, $5.15; 99996 Control device for automatic indication of erroneous establishing of connections in automatic telephone communication systems, $4.60; 99998 Device in oil vessel for high tension transformer, $1.40; 99999 Electrode steam boiler, $0.85; 100000 Device to diminish wave formations on drawn glass, $0.95; 100001 Window movable in horizontal and vertical plane, $3.45; 100002 Self adhesive tightening ledge for doors, etc., $1.00; 100003 Glass ledge, $1.60; 100004 Method for lifting a work barrack made of elements, and arrangements in the elements, $3.05; 100005 Method for manufacture of rubber objects, $1.70; 100006 Mixing apparatus, $1.54; 100008 Method and arrangement for tapping of electrothermic furnaces, $1.90; 100011 Rake and loading apparatus, espec. for hay, grass, etc., $1.40; 100012 Pneumatic pulsator for milking machines, $6.20; 100015 Tightening arrangement for rating axles, $4.60; 100016 Bath for chemical separation of copper on a metallic or non-metallic surface, $1.55; 100017 Method for manufacture of grain products, where the grain is impregnated, $1.50.

NORWEGIAN PATENTS IN ENGLISH TRANSLATION, NOS. 100019-100021, 100025-100029, 100031-100035, 100037, 100040, 100043-100044, 100046-100047, 100050, 100054-100058, 100061-100066, 100069, 100071-100073, 100077, 100081-100083. 21 Aug 62, 39 nos.
Order from AC

DESCRIPTORS: *Patents, *Inventions, *Norway, Buildings, Wood pulp, Heat transfer, Oils, Electrophotography, Pumps, Motorcycles, Tractors, Shoes, Centrifuges, Echo ranging, Packaging, Excavators, Ovens, Metals, Oxides, Wiring diagrams, Generators, Glass, Containers, Transportation, Sheets, Nickel, Piston rings, Animals, Feeding, Vitamins, Bleaching, Paper, Printing, Tankers, Transparent panels, Textiles, Dyes, Concrete, Fuels.

Contents:
100019 Method at manufacture of building material with cell structure, $4.60; 100020 Device in machine for manufacture of formed objects of wood pulp, $3.20; 100021 Heat sensitive capsules containing cores, $2.00; 100025 Method for manufacture of small oil containing capsules, $1.10; 100026 Method for manufacture of lectro-photographic reflex copies, $0.80; 100027 Axle tightening device for pumps, $2.30; 100028 Maneuvering installation affecting the speed clutch arm on motorcycles, etc., $2.85; 100029 Device for variable belt length for tractors, $1.25; 100031 Overshoes, $1.85; 100032 Device for signalling, indicating, registering and or correction of movements of rotation axle and or number of revolutions for the rotor of a centrifuge, $2.30; 100033 Echo sounder machine, $3.50; 100034 Method and arrangement for manufacture of matches provided with print, $2.30; 100035 Insert in bag shaped packing for pastry, etc., $1.75; 100037 Excavator for ditches, $0.80; 100040 Device for electric ovens, $0.75; 100043 Method at reduction of metal oxides, $0.75; 100044 Radiophare system, $5.25; 100046 Device for support of winding heads for rotor windings, $1.25; 100047 Arrangement for magnetizing a synchronous A. C. current generator, $4.85; 100050 Device for suction of oil from an oil container, $1.30; 100054 Method and apparatus for manufacture of double glass units, $1.40; 100055 Combined storage and transport basket or watertight vessel, $1.70; 100056 Improved folding panel, $1.80; 100057 Pre-fabricated stack, $2.00; 100058 Rotary kiln and method for extraction of nickel or other metal, under use of the kiln, $3.30; 100061 Piston ring, $1.10; 100062 Fodder for animal, $0.70; 100063 Preparation containing vitamin active substances and method for manufacture of the preparation, $3.50; 100064 Method for chemical treatment, espec. bleaching of fibrous material, $5.85; 100065 Device in suction plant at machine for manufacture of paper and cellulose lengths, $4.90; 100066 Method for manufacture of printing blocks, $1.50; 100069 Tanker, $1.10; 100071 Device in hinges for turning windows, $2.75; 100072 Method for manufacture of footwear, $2.10; 100073 Method for dyeing of textiles, $1.75; 100077 Turning window, $1.70; 100081 Device in mold for casting of concrete sample, $1.90; 100082 Fuel for combustion engines, $1.55; 100083 Fuel for combustion engines, $1.85.

NORWEGIAN PATENTS IN ENGLISH TRANSLATION, NOS. 100119-100120, 100126-100141, 100146-100150. 3 Sep 62, 23 nos.
Order from AC

DESCRIPTORS: *Patents, *Inventions, *Norway, Strainers, Gaseous diffusion separation, Iron, Vibration isolators, Couplings, Radiofrequency amplifiers, Electric welding, Carbon removing compounds, Polymer solutions, Protective coverings, Waxes, Glass, Milling machines, Paper, Hoists, Cements, Ventilation, Thermostatic valves, Containers, Phosphate coatings, Fire extinguishers, Shoes

Contents:
100119 Drum filter or band filters for purification of liquids, $0.85; 100120 Catalyzor for removal of oxygen from gas mixtures or method in use of catalyzor, $3.30; 100126 Method for manufacture of iron and steel in melted state from a powder formed iron material, $2.85; 100127 Shock absorber of rubber, $2.55; 100128 Coupling device for bringing about short lasting condenser discharge pulses, $1.87; 100129 Ultra short wave amplifier, $2.75; 100130 Method at electric arc welding, $0.95; 100131 Method for removal of carbon from acqueous carbon suspensions, $1.65; 100132 Polyester solutions which can be transformed to formed objects, $2.30; 100133 Same as 100132, $1.75; 100134 Facial mask, $3.85; 100135 Method for manufacturing models of wax in a rubber mold, or of a material with similar qualities, for use in the so-called "lost wax" molding method, $0.55; 100136 Method at manufacture of fibers, particularly glass fibers, $2.75; 100137 Discharging device for ground goods in a mill, $1.10; 100138 Paper basket, $3.95; 100139 Device in luffing crane, $3.85; 100140 Tube formed body for drying of

masonry, $5.50; 100141 Ventilation sheet, $3.85; 100146 Thermostatic mixing valve for liquids, $4.73; 100147 Method in manufacture of packings, etc., $2.53; 100148 Method for manufacture of phosphate coating on iron surfaces, $4.84; 100149 Device in fire extinguishing apparatus with dry powder, $2.47; 100150 Shoe insert, $3.85

SCIENCE BULLETIN, 1961, NO. 12 AND 1962, NO. 1: SELECTED ARTICLES. 4 June 62 [99]p. 12 refs. JPRS: 13972.
Order from OTS or SLA $8.60 62-24966

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1961, no. 12, p. 30-36, 44-49; and 1962, no. 1, p. 13-18, 38-39, 41-45, 48.

DESCRIPTORS: Boron, Manganese, *Wheat, *Infrared spectroscopy, *Coal, Drugs, Hypertension, Therapy, *Geography, Geology, China, *Agriculture, Genetics, Plants, Growth, *Economics, Fishes, *Science.

Contents:
The effect of traces of boron and manganese on raising the production of wheat, by Li Chi-yun and others
The infrared spectrum of Chinese coals, by T. A. Kukharenko and Ch'ien Ping-chun
A review of antihypertensive drugs, by Ch'en Wei-chou and Ting Kuang-sheng
A discussion of the mission and the directions of the study of topography in China, by Ch'en Yu-ch'ang
The National Conference for Crop Breeding and Cultivation in China (no. 1) Ch'angsha, 20-28 Dec 61, by Ch'en Hsun-ch'ing
Topographical discussion of the Chinese Conference of Geographical Sciences, by Chou Hang
Special discussion meeting on economic geography of the Chinese Conference of Geographical Sciences, by Chou Hang
Special discussion meeting of historical geography of the Chinese Conference of Geographical, Sciences, by Chou Hang
Fresh water fish culture in China: book review by Ch'eng Chieh
K'o Hsueh T'ung Pao, 1961, no. 12: Table of contents
K'o Hsueh T'ung Pao, 1962, no. 1: Table of contents

Cherpenov, E. I.
IN THE SIBERIAN "SCIENCE TOWN". [1962] [7]p. [DSIR] NLL M. 4987.
Order from OTS or SLA $1.10 62-25906

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 9, p. 40-47.

DESCRIPTORS: Scientific research, *Siberia, *Scientific organizations, *Construction.

Erdey-Gruz, Tibor.
NATIONAL LONG-RANGE RESEARCH PLAN OF HUNGARY. 21 June 62 [27]p. JPRS: 14212.
Order from OTS or SLA $2.60 62-25481

Trans. of Magyar Tudomany (Hungary) 1962, v. 7 [69] no. 4, p. 203-224.

DESCRIPTORS: *Scientific research, *Industrial research, Personnel, Economics, *Hungary.

Garmash, V. A. Pereverzev-Orlov, V. S., and Tsirlin, V. M.
ON A QUASI-TOPOLOGICAL METHOD OF RECOGNIZING LETTERS. [1961]. 6p. 5 refs. MDF G-195.
Order from OTS $0.50 62-11363

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Energ[etika] i Avto[matika] 1960, no. 3, p. 180-182.
Another translation is available from OTS $0.50 in 61-21074, JPRS-6633, 23 Jan 61, 17p.

DESCRIPTORS: *Machine translation, *Topology, Data processing systems, Reading machines, Coding

The letters are treated as flat linear graphs and a different writing of the same letter is considered as a homeomorphic transformation of a certain original ideal symbol. The recognition problem is hence reduced to the establishment of the homeomorphism between the pattern presented and one of the patterns of the alphabet of ideal symbols. The principle of topological separation of letters which is described is realized technically by using a follow-up scanner which accomplished the circuit around the external contour of the proposed symbol. To recognize symbols, a system which determines the index of the vertices at the break points in the external contour and a simple logical circuit which would decode the code combinations obtained in cyclic permutations must be added to the follow-up scanner.

Itel'son, L. B.
UTILIZATION OF MATHEMATICAL AND CYBERNETIC METHODS IN PEDAGOGICAL RESEARCH (Ob Ispol'zovanii Matematicheskikh i Kiberneticheskikh Metodov v Pedagogicheskikh Issledovaniyakh). 5 July 62 [17]p. 19 refs. JPRS: 14383.
Order from OTS or SLA $1.60 62-25603

Trans. of Sovetskaya Pedagogika (USSR) 1962 [v. 26] no. 4, p. 45-55.

DESCRIPTORS: *Mathematics, *Cybernetics, *Teaching machines, Industrial training, Feedback, Education, Information theory

Markov, A. A.
DEVELOPMENTS OF CYBERNETICS IN THE SOVIET UNION. 7 Mar 62 [10]p. JPRS: 12834.
Order from OTS or SLA $1.10 62-23402

Trans. of Przeglad Elektrotechniczny (Poland) 1961, v. 37, no. 2, p. 53-55.

DESCRIPTORS: *Cybernetics, *Control systems, Information theory, Data storage systems, Data transmission systems.

Podarov, V.
INSTRUMENT FOR CHECKING OPERATOR'S TELEPHONE SET. 26 Feb 62 [4]p. USASIA Trans. Log no. 1292-Z.
Order from OTS or SLA $1.10 62-23320

Trans. of Voennyi Vestnik (USSR) 1961 [v. 41, no. 3] p. 100-101.

DESCRIPTORS: *Telephones, Panel boards (Electricity), Test equipment, *Headphones, *Microphones, Test methods.

Rudnev, K. N.
COORDINATION OF SCIENTIFIC RESEARCH.
2 July 62 [11]p. JPRS: 14349.
Order from OTS or SLA $1.60 62-25614

Trans. from Izvestiya (USSR) 1962 [no. 86] p. 1 and 3.

DESCRIPTORS: *Scientific research, *Research program administration.

Szeworska, Ludmila.
PLENARY SESSIONS OF THE DEPARTMENTS AND SCIENTIFIC COMMITTEES OF THE POLISH ACADEMY OF SCIENCES IN THE FIRST QUARTER OF 1961. 22 June 62 [28]p. JPRS: 14228.
Order from OTS or SLA $2.60 62-25476

Trans. of Nauka Polska, 1961, v. 9, no. 2(34) p. 261-267.

DESCRIPTORS: Social sciences, Biology, Mathematics, Chemistry, Geology, Geography, *Industrial research, Agriculture, Forestry, *Scientific research, *Poland.

SOCIAL SCIENCES

GENERAL CONDITIONS FOR THE DELIVERY.
14 Feb 57, 5p.
Order from SLA $1.10 62-10709

Trans. of unidentified German language mono. issued by Ervin Kampf, Maschinenfabrik, Bielstein-Mühlen (Rhld.) as instructions for internal use, nid.

DESCRIPTORS: *Commerce, Distribution, Procurement, Economics.

Abramyan, L. A.
PRINCIPLE OF SYMMETRY AND DIALECTICS.
24 May 62 [27]p. JPRS: 13860.
Order from OTS or SLA $2.60 62-24979

Trans. of Akademiya Nauk Armyanskoi SSR, Erevan. Izvestiya. Obshchestvennye Nauki, 1961, no. 11, p. 35-46.

DESCRIPTORS: *Philosophy, Mathematical logic, Groups (Mathematics), Solid state physics, Particles, Science, *Reasoning.

Berg, A. I., Kitov, A. I., and Lyapunov, A. A.
POSSIBILITIES OF AUTOMATION IN THE CONTROL OF THE NATIONAL ECONOMY. 20 Feb 62 [21]p. 1 ref. JPRS: 12562.
Order from OTS or SLA $2.60 62-19158

Trans. of #Problemy Kibernetiki (USSR) 1961, no. 6, p. 83-100.

DESCRIPTORS: *Automation, *Economics, Control, Data processing systems, Digital computers, Management engineering.

Kolman, Arnost.
PHILOSOPHY AND CYBERNETICS. 2 May 62 [23]p. JPRS: 13642.
Order from OTS or SLA $2.60 62-24395

Trans. of Nova Mysl (Czechoslovakia) 1962, no. 1, p. 48-57.

DESCRIPTORS: *Philosophy, *Cybernetics

Lutter.
SOME REMARKS WITH RESPECT TO THE USE OF THE CONTRIBUTORY INFRINGEMENT DOCTRINE IN GERMANY. 13 Aug 59, 3p.
Order from SLA $1.10 62-14024

Trans. of excerpts from mono. German Patent Law, n. p., n. d.

DESCRIPTORS: Germany, *Inventions, *Patents, Political science

Maikapar, E.
PATENTS AND PATENT LAW: CONCERNING AN IMMINENT PROBLEM IN THE WORK OF INVENTORS, tr. by J. B. 20 June 62, 7p.
Order from OTS or SLA $1.10 62-25692

Trans. of Pravda [Moscow] (USSR) 1962, 15 June, p. 3 (last two cols.).

DESCRIPTORS: *Patents, *Inventions, *USSR, Foreign policy, Commerce

Data are presented showing that more attention must be paid to the patenting procedure. Examples are cited showing cases where the USSR lost considerable foreign trade because they failed to pay the fees required to keep keep their patents in force in several foreign countries (England, USA, France, etc.). Between the years 1931 and 1960 no book was published in the Soviet Union describing procedures for obtaining foreign (non-Soviet) patents.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/5869
Drits, Mikhail Yefimovich, and others
AUTORADIOGRAPHY IN METAL SCIENCE (Avtoradiografiya v metallovedenii) Moscow, Metallurgizdat, 1961. 170p. 3700 copies printed.

BR-SOV/5875
Kitov, Anatoliy Ivanovich, and Nikolay Andreyevich Krinitskiy
ELECTRONIC DIGITAL COMPUTERS AND PROGRAMMING (Elektronyye tsifrovyye mashiny i programmirovaniye) 2d ed., unrev. Moscow, Fizmatgiz, 1961. 572p. 40,000 copies printed.

BR-SOV/5898
Boltaks, Boris Iosifovich
DIFFUSION IN SEMICONDUCTORS (Diffuziya v poluprovodnikakh) Moscow, Fizmatgiz, 1961. 462p. (Series: Fizika poluprovodnikov i poluprovodnikovykh priborov) 15,000 copies printed.

BR-SOV/5914
Akademiya nauk SSSR. Fiziko-tekhnicheskiy institut im. A. F. Ioffe
GAMMA RAYS (Gamma-luchi) Moscow, Izd-vo AN SSSR, 1961. 720p. Errata slip inserted. 3300 copies printed.

BR-SOV/5918
Petrov, Andrey Nikolayevich and Vladimir Filippovich Shmatchenko
ELECTROMECHANICAL RADIOFREQUENCY BAND-PASS FILTERS (Polosovyye elektromekhanicheskiye fil'try radiochastot) Moscow, Gosenergoizdat, 1961. 299p. 6500 copies printed.

BR-SOV/5923
Dasoyan, Martin Avetisovich
CHEMICAL CURRENT SOURCES; MANUAL (Khimicheskiye istochniki toka; spravochnoye posobiye) Moscow, Gosenergoizdat, 1961. 349p. 10,000 copies printed.

BR-SOV/5928
Shluger, Mikhail Aleksandrovich
ACCELERATION AND IMPROVEMENT IN THE CHROMIUM PLATING OF MACHINE PARTS (Uskoreniye i usovershenstvovaniye khromirovaniya detaley mashin) Moscow, Mashgiz, 1961. 139p. 7500 copies printed.

BR-SOV/5930
Vinitskiy, Arkadiy Savvich
OUTLINE OF RADAR PRINCIPLES WITH CONTINUOUS RADIATION (Ocherk osnov radiolokatsii pri nepreryvnom izluchenii radiovoln) Moscow, Izd-vo "Sovetskoye radio", 1961. 494p. Errata slip inserted. 13,000 copies printed.

BR-SOV/5932
Dubinin, Nikolay Petrovich
PROBLEMS IN RADIATION GENETICS (Problemy radiatsionnoy genetiki) Moscow, Gosatomizdat, 1961. 467p. Errata slip inserted. 5000 copies printed.

BR-SOV/5949
Lykov, Aleksey Vasil'yevich
THEORETICAL PRINCIPLES OF STRUCTURAL-ENGINEERING THERMOPHYSICS (Teoreticheskiye osnovy stroitel'noy teplofiziki) Minsk, Izd-vo AN BSSR, 1961. 519p. 2500 copies printed.

BR-SOV/5954
Fedorchenko, Ivan Mikhaylovich and Rostislav Aleksandrovich Andriyevskiy.
PRINCIPLES OF POWDER METALLURGY (Osnovy poroshkovoy metallurgii) Kiyev, Izd-vo AN UkrSSR, 1961. 420p. 10,000 copies printed.

BR-SOV/5959
Bogolyubov, N. N.
QUASI-AVERAGES IN PROBLEMS OF STATISTICAL MECHANICS (Kvazisredniye v zadachakh statisticheskoy mekhaniki) [Dubna, 1961] 123p. 520 copies printed.

BR-SOV/5963
Tikhodeyev, Grigoriy Mikhaylovich [Deceased]
ELECTROTHERMAL PROPERTIES OF THE WELDING ARC (Energeticheskiye svoystva elektricheskoy svarochnoy dugi) Moscow, Izd-vo AN SSSR, 1961. 254p. Errata slip inserted. 2600 copies printed.

BR-SOV/5966
Ragdoyev, Aleksandr Georgiyevich
SPATIAL NONSTATIONARY MOVEMENTS OF SOLIDS WITH IMPACT WAVES (Prostranstvennyye nestatsionarnyye dvizheniya sploshnoy sredy s unarnymi volnami) Yerevan, Izd-vo AN Armyanskoy SSR, 1961. 274p. Errata slip inserted. 1000 copies printed.

BR-SOV/5967
Nekrasov, Aleksandr Ivanovich
COLLECTED WORKS, V. 1 (Sobraniye sochineniy, t. 1) Moscow, Izd-vo AN SSSR, 1961. 442p. Errata slip inserted. 2300 copies printed.

BR-SOV/5970
Voytkevich, Georgiy Vitol'dovich
PROBLEMS IN RADIOGEOLOGY (Problemy radiogeologii) Moscow, Gosgeoltekhizdat, 1961. 350p. 2000 copies printed.

BR-SOV/5973
Rayev-Bogoslovskiy and others
HARD SURFACE COVERS OF AIRFIELDS (Zhestkiye pokrytiya aerodromov) Moscow, Avtotransizdat, 1961. 321p. 2000 copies printed.

BR-SOV/5975
International Institute of Welding
TWELFTH ANNUAL ASSEMBLY OF THE INTERNATIONAL INSTITUTE OF WELDING, OPATIJA, JUNE 29 - JULY 5, 1959 (XII kongress Mezhdunarodnogo instituta svarki, 29 iyunya - 5 iyulya 1959 v g. Opatii) Moscow, Mashgiz, 1961. 359p. 3000 copies printed.

BR-CZECH/5977
International Conference on Semiconductor Physics. Prague, 1960.
PROCEEDINGS. Prague, Publishing House of the Czechoslavak Academy of Sciences, 1961. 1133p. No. of copies printed not given.

BR-SOV/5980
Gurevich, Maksim Isidorovich
STREAMLINE THEORY OF THE IDEAL FLUID (Teoriya struy ideal'noy zhidkosti) Moscow, Fizmatgiz, 1961. 496p. 6500 copies printed.

BR-SOV/5983
Monakhov, Valentin Ivanovich
MEASURING THE RATE OF FLOW AND TOTAL DISCHARGE OF LIQUID, GAS, AND VAPOR (Izmereniye raskhoda i kolichestva zhidkosti, gaza i para) Moscow, Gosenergoizdat, 1962. 127p. (Series: Biblioteka po avtomatike, vyp. 50) 23,000 copies printed.

BR-SOV/5987
Yur'yev, Boris Nikolayevich
SELECTED WORKS. V. 1: PROPELLERS, HELICOPTERS (Izbrannyye trudy. t. 1: Vozdushnyye vinty, vertolety) Moscow, Izd-vo AN SSSR, 1961. 551p. Errata slip inserted. 1500 copies printed.

BR-SOV/5988
Balandin, Yuriy Fedorovich, and Vadim Georgiyevich Markov
CONSTRUCTIONAL MATERIALS FOR POWER PLANTS WITH LIQUID-METAL HEAT CARRIERS (Konstruktsionnyye materialy dlya ustanovok s zhidkometallicheskimi teplonositelyami) Leningrad, Sudpromgiz, 1961. 205p. 3250 copies printed.

BR-SOV/5993
Lyapunov, Boris Valer'yanovich
ROCKETS AND INTERPLANETARY FLIGHTS (Rakety i mezhplanetnyye polety) Moscow, Voyen. izd-vo M-va obor. SSSR, 1962. 121p. (Series: Nauchnopolulyarnaya biblioteka voyennogo izdatel'stva) 50,000 copies printed.

TRANSLATIONS IN PROCESS

COLLECTION OF SCIENTIFIC WORKS OF THE ELISTA ANTI-PLAGUE STATION, NO. 1.
Elistinskaya Protivochumnaya Stantsiya. Sbornik Nauchnykh Rabor (USSR) 1959, no. 1, 252 p.

NEWS OF THE HIGHER EDUCATIONAL INSTITUTIONS. AVIATION TECHNOLOGY, 1961, NO. 3.
Izvestiya Vysshikh Uchebnykh Zavedeniya. Aviatsionnaya Tekhnika (USSR) 1961, no. 3.

Aleksandrov, S. G. and Fedorov, R. E.
SOVIET SATELLITES AND SPACE SHIPS [2 ED.].
Mono. Sovetskie Sputniki i Kosmicheskie Korabli [2 ed, Moscow] 1961, p. 125-436.

Alt'shuler, S. A.
ELECTRON PARAMEGNETIC RESONANCE.
Mono. Elektronnyi Paramagnitnyi Rezonans, Moscow, 1961, 368p.

Bashta, T. M.
DESIGN AND CONSTRUCTION OF AIRCRAFT HYDRAULIC EQUIPMENT.
Mono. Raschety i Konstruktsii Samoletnykh Gidravlicheskikh Ustroistv, 3d ed. rev. and enl., Moscow, 1961, 476p.

Kostyuk, P. G.
MICROELECTRODE TECHNIQUE.
Mono. Mikroelektrodnaya Tekhnika, n. p., 1960, p. 1-126.

Kotlyar, L. M. and Vitinskii, Yu. I.
THE SOLAR MAGNETOGRAPH OF THE MAIN ASTRONOMICAL OBSERVATORY AS USSR, PT. I [AND] ON THE SPECIFIC FEATURES IN LONGITUDINAL DISTRIBUTION OF THE SOLAR ACTIVITY.
Astronomicheskaya Observatoriya, Pulkovo. Izvestiya (Ussr) 1960, v. 21, no. 4 [163] p. 73-87, 96-105.

Kurov, V. D. and Dolzhanskii, Yu. M.
PLANNING AND DESIGNING FUNDAMENTALS OF SOLID FUEL ROCKET-PROPELLED MISSILES.
Mono. Osnovye Proektirovaniya Porokhnovnykh Raketnykh Snaryadov [Moscow] 1961, 294p.

Makhonin, V. A., Ostianu, V. M., and Fain, V. S.
SOME QUESTIONS OF MULTICHANNEL COMMUNICATIONS; THE GEOMETRY OF BOOLEAN FUNCTIONS AND SELF-CORRECTING CODES FROM THE VIEWPOINT OF THE ERLANGEN PROGRAMME; THE CONSTRUCTION OF NON-BINARY ERROR-CORRECTING CODES AND AN ESTIMATE OF THE NUMBER OF CODE WORDS;[AND] THE RECOGNITION OF SPACE OBJECTS.
Problemy Peredachi Informatsii (USSR) 1961, no. 10, p. 5-23, 35-41, 42-48, 49-56.

Mgebryan, O. I.
EXPERIMENTAL INVESTIGATIONS ON THE MOVEMENT OF DISLOCATIONS IN METALS.
Mono. Eksperimental'nye Issledovaniya po Dvizheniyu Dislokatsii v Metallakh [Erevan] 1961, p. 5 189.

Pavlov, A. A. and Poputsillo, V. P.
DESIGN OF SIMPLE OPTIMAL SECOND-ORDER RELAY SYSTEMS.
Avtomat [Icheskoe] Upr [avlenie] i Vychisl[itelnaya] Tekhn[ika] (USSR) 1960, v. 3, p. 419-444.

Raevskii, Nikolai Petrovich and Subbotin, Mikhail Ivanovich.
LINEAR ACCELERATION MEASUREMENTS.
Mono. Izmerenie Lineinykh Uskorenii, Moscow, 1961, 62p.

Saibel', A. G.
PRINCIPLES OF RADIOLOCATION
Mono. Osnovy Radiolokatsii, Moscow, n. d., p. 3-250, 291 337, 355-372.

Skobel tsyn, D. V., ed.
TRANSACTIONS OF THE PHYSICS INST., ACADEMY OF SCIENCES, USSR.
Akademiya Nauk SSSR. Fizicheskii Institut. Trudy, 1958, v. 10, 175p.

Sokolov, M. I. and Pavlov, P. V.
HANDBOOK ON THE USE OF VACCINES AND SERA.
Mono. Spravochnik po Primeneniye Vaktsin i Syvorotok, n. p., 1961, p. 1-163.

Stepanov, A. A. and Popov, V. N.
CHEMICAL WEAPONS AND PRINCIPLES OF ANTI-CHEMICAL DEFENSE.
Mono. Khimicheskoe Gruzhie i Osnovy Protivokhimicheskoe Zashchity, n. p., 1962, 126p.

Vasil'ev, M. V. and Stanyukovich, K. P.
IN A WORLD OF SEVEN ELEMENTS.
Mono. V Mire Stikhii, Moscow 1961, 254p.

Zholdak, S. A.
THE MANUFACTURE OF MINIATURE GYROMOTORS.
Mono. Tekhnologiya Izgotovleniya Malogabaritnikh Girmotorov, Leningrad, n. d., 266p.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 8, Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.